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## Hydraulic Hand Tools

### 12 Ton Hydraulic Swage Tool - 1" Jaw Opening – Huskie

model w R-410

The WR-410, hand operated, compression tool features a two stage rapid advance pumping system. The tool bypasses automatically when full output force is achieved. The tool can be used for making wire rope slings, securing equipment, putting eyes on tow ropes, or making up barrier cables. It accepts all U-type dies currently manufactured for 12 ton tools for use on aluminum or copper wire rope sleeves.

Carrying case included

**features:**

- Two-stage pumping piston for rapid advance
- Replaceable, drop-out bypass cartridge for easy shop repairs
- 180° swivel crimping head permits installations in confined areas
- Accepts all U-type dies used in 12 ton tools on today's market
- Magnetic oil reservoir plug to trap stray metal fragments
- Twist handle release



Wire Rope Crimping Dies (Set of 7)				
Die No.	Wire Rope Size (in)	Sleeve No. Aluminum	Copper	
316 AC	3/16	A3	C3	
14 AC	1/4	A4	C4	
516 AC	5/16	A5	C5	
38 AC	3/8	A6	C6	
716A 12C	7/16	A7	C8	
716 C	7/16	-	C7	
12 A	1/2	A8	-	

Model No.	Desc.	Output (ton)	Weight (lbs)	Length (in)	Jaw Opening (in)	Wire Rope Range (in)
WR-410	Hydraulic swage tool	12	13	23	1	3/16 - 1/2

### Hydraulic Operated Steel Cutters – Huskie JSH-Series

Portable, hand held cutters are designed to cut the toughest steels in construction today. Choose your tool carefully since each one is tailored to your specific job. All tools can be carried to the job site. No more cumbersome, dangerous torches or electric cut-off saws. Cables are cleanly cut with minimal distortion - suitable for sleeving.

**Economical-up to 8 tools in one** – JSH models 20, 24 and 32 are rated to cut wire rope as well as rebar and bolts. This means you get both a bolt cutter and a wire cutter. One JSH-Series tool will replace as many as 8 other bolt and wire cutters in your tool kit. You would pay a higher total price for the 8 cutters than for one long-lasting JSH series hydraulic cutter. You get even more for your money because any JSH tool will cut beyond the rated capacity of any conventional tool.

**Safe** – Hydraulic tools are the modern safe way to cut steel wire rope, rebar, bolts, and alloy chain. Portable JSH Series tools are available in hand or pump-operated models. Hydraulic cutters eliminate the fire hazard of acetylene torches and the risks of injury from swinging hammers and cut-off saws.

**Convenient** – Self-contained JSH Series tools are lightweight and portable. They require no set-up time. They cut with amazing speed and are ideal in close quarters, manholes, trenches, under water, and in other environments where acetylene torches, electric cutters and larger tools cannot be used. Their versatility makes them advantageous for a wide variety of applications.

**Long lasting** – We've engineered JSH Series tools to last 15 to 20 years or more when used as rated. They are precision cutting instruments designed to be repaired and maintained for long lasting use.

**Note: Not recommended for cutting bridge strand.**

Model No.	Desc.	Output (ton)	Wt. (lbs)	Length (in)	Wire Ropes (in)	Soft Steel Bolts (in)	Rebar, Ground & Anchor Rod (in)	CU & AL Wire (in)
JSH-20	Hydraulic cutter	4.4	6	15	3/4	11/16	#4 1/2"	3/4
JSH-24	Hydraulic cutter	7.8	9	17	7/8	7/8	#5 5/8"	7/8
JSH-32	Hydraulic cutter	19.8	21	27	1-1/4	1	#8 1"	1-1/4

Replacement blade and head shear information available, please call.

### Hydraulic Operated Steel Cutting Heads – Huskie JSHP-Series

These remote head units connect to any 10,000 psi, high pressure, hydraulic pumping system. Choose from three different models of production cutters, to cut costs and efforts. Quick action, screw-type couplers are supplied with tools.

The Huskie remote cutters have a latched cutter head which can be opened for easy cable or bar insertion. The movable blade advances in a shear fashion, to cut the material cleanly.

When the cutting pressure is relieved an internal ram spring retracts the blade. The guillotine cutting style was chosen over open jaw type cutters because of its more powerful output force, larger cable capacities, compact size and longevity.

**Note: Not recommended for cutting bridge strand.**



JSHP-20



JSHP-24



JSHP-32

Model No.	Desc.	Output (ton)	Wt. (lbs)	Length (in)	Wire Ropes (in)	Soft Steel Bolts (in)	Rebar, Ground & Anchor Rod (in)	Std. Guy Strand (in)
JSH-20	Cutting head	4.4	3	5	9/16	9/16	#4 1/2"	1/2
JSH-24	Cutting head	7.8	5	11	3/4	3/4	#5 5/8"	5/8
JSH-32	Cutting head	20	19	14	1	1	#8 1"	7/8

Replacement blade and head shear information available, please call.

### Bolt and Bar Cutters with Center Cut Style Blades – Huskie

models JSH-24CC, JSH-32CC, and JSHP-24CC

The JSH-24CC, JSH-32CC and JSHP-24CC hydraulic cutters were specially engineered to cut the toughest chain and rebar.

The anvil style, center cut eliminates jamming blades common to shear style cutters. Damaged blades are easily replaced in the field.

The tools are made of high grade steel and have rubber handle grips. All tools are black zinc oxide coated to help reduce corrosion.

A flip top latch opens the tool jaw to easily accept cables and bar. The head can be rotated up to 180° to facilitate easy wire positioning and operator leverage.

The JSHP-24CC is the remote head version, which requires an external 10,000 psi pump in order to operate.

**Note: Center cut blades are not recommended for cutting wire rope.**

**features:**

- Lightweight and portable
- Works in any position
- Anvil cut eliminates jamming
- 180° rotatable head



Model No.	Desc.	Output (ton)	Wt. (lbs)	Length (in)	Anchor Rod (in)	Ground Rod (in)	Guy Strand (in)	Rebar Chain Grade 70 Alloy
JSH-24CC	Bolt and bar cutter	7.8	9	17	5/8	5/8	9/16	#5 Jaw width .93" - 3/8" chain
JSH-32CC	Bolt and bar cutter	19.8	23	27	1	1	3/4	#8 Jaw width 1.88" - 1/2" Chain
JSHP-24CC	Remote head	7.4	5	12	5/8	5/8	1/2	#5 Jaw width .93"

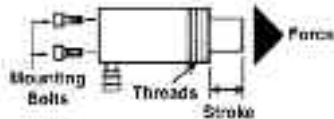
## Hydraulics

# Building a Hydraulic System

## Selecting the Components you Need

### 1. what type of Ram do you need?

- Force required \_\_\_\_\_
- Stroke required \_\_\_\_\_
- Collapsed ht. required \_\_\_\_\_
- Portability
  - Aluminum  Steel
- Single acting, spring return
- Double-acting
- Center-hole
- Mounting required
- No. of rams in circuit \_\_\_\_\_



- Hand operated
- Air/hydraulic
- Electric/hydraulic
- Gasoline engine/hydraulic

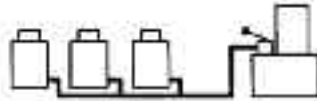
### useful formulas:

Performance (time/handle strokes req'd. to fully extend ram)

$$\text{Time} = \frac{\text{Oil Cap of ram(s) (cu. in.)}}{\text{Pump output (cu. in./min. or strokes)}}$$

To determine no. of rams that can be used with a pump:

$$\text{No. of Rams} = \frac{\text{Usable oil cap. of pump (cu. in.)}}{\text{Oil cap. of cyl. (cu. in.)}}$$



**Note:** Allowance must be made for oil in the lines.

### 3. what type of CONTROLS do you need?

- Manually operated valve
  - Pump mounted  Remote
  - For single-acting rams
  - For double-acting rams
- Solenoid operated valve
  - Pump mounted  Remote
  - For single-acting rams
  - For double-acting rams
- Accessory valves
  - Shut-off  Check valve in-line
  - Pressure regulator valve
  - Pilot operated check valve
  - Pressure switch  Sequence valve

### useful formulas:

To determine a ram's force cap:

$$\text{force} = \text{Area of Piston (sq. in.)} \times \text{P.S.I. (from pump)}$$

To determine oil cap of a ram:

$$\text{Oil Cap.} = \text{Area of Piston (sq. in.)} \times \text{Cyl. Stroke (in.)}$$

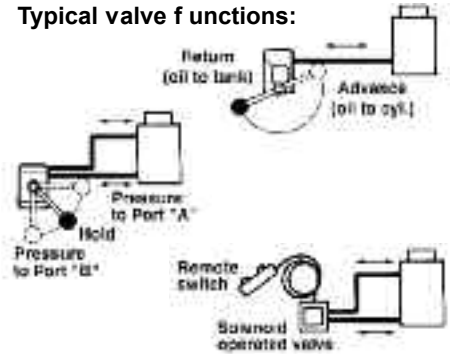
To determine usable oil cap. of pump needed for a multiple ram system:

$$\text{usable Oil} = \text{Oil cap. of cyl. (cu. in.)} \times \text{No. of rams in system}$$

### 2. what type of Pump do you need?

- P.S.I. output required \_\_\_\_\_
- Speed
  - Single stage  Two stage
- Oil delivery req'd (1st stage/2nd stage)
  - Cubic in. per minute \_\_\_\_\_
  - Cubic in. per handle stroke \_\_\_\_\_
- Useable oil capacity (reservoir) \_\_\_\_\_
- Portability

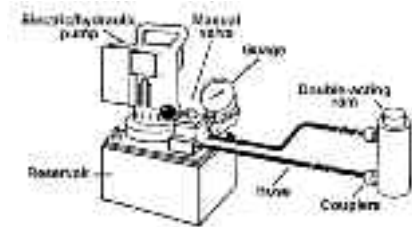
### Typical valve functions:



### 4. what ACCESSORIES do you need?

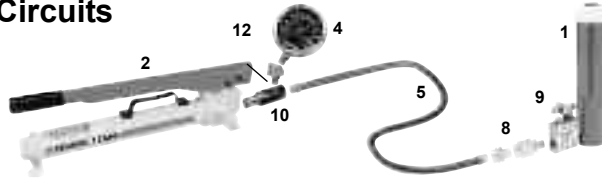
- Hose and couplings
- Pressure gauge
- Hand or foot switch for remote motor or valve control
- Manifold blocks
- Hydraulic oil
  - Standard
  - "Flame-Out" fire resistant
- Pump cart

### Typical Hydraulic System

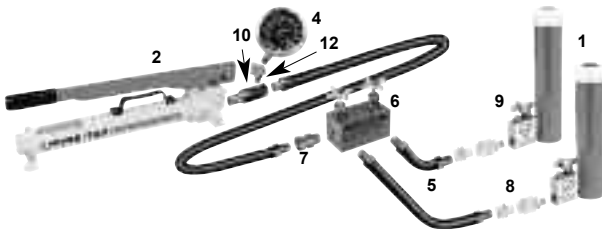


## Typical Hydraulic Circuits

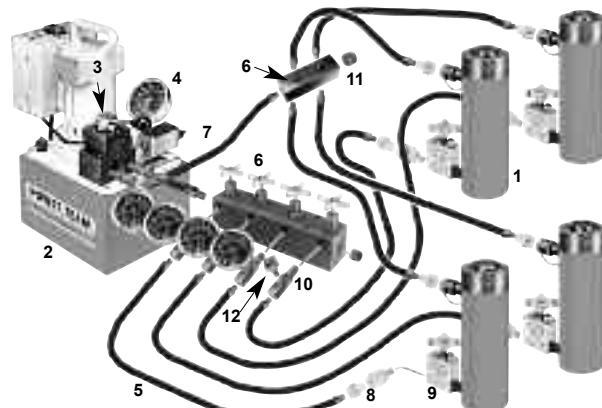
Basic single-acting system with a hand pump, gauge, hose and single-acting cylinder.



Basic single-acting system with a hand pump, gauge, hose, multiple shut-off valves, load-lowering valves and multiple cylinders.



Basic double-acting system with an electric/hydraulic pump, shut-off valves, load-lowering valves and multiple double-acting cylinders.



### Legend

- 1 **Cylinder** - applies hydraulic force.
- 2 **Pump** - a device for converting mechanical energy to fluid energy.
- 3 **directional valve** - controls the direction of hydraulic fluid in the system.
- 4 **gauge** - measures psi pressure (lbs/in<sup>2</sup>) and/or force.
- 5 **Hose** - transports hydraulic fluid.
- 6 **manifold** - allows distribution of hydraulic fluid from one source to several cylinders. (No. 9617, 9642, 9644)
- 7 **Swivel Connector** - allows proper alignment of valves and/or gauges. Used when units being connected cannot be rotated. (No. 9675)
- 8 **Quick Coupling** - "hose half" and "cylinder half" couplings are used for quick connection and fluid flow check when separated. (No. 9796 & 9798)
- 9 **load-lowering valve** - allows metered lowering of cylinder and provides safety when prolonged load lifting is required. (No. 9596)
- 10 **Tee, gauge a dapter** - allows for installation of pressure/ tonnage gauge anywhere in the hydraulic system. (No. 9670)
- 11 **Pipe Plug** - for blocking unused ports within the system. (No. 9687)
- 12 **fitting, 45°** - used to mount gauge at an angle. (No. 9678)

# Cylinders

## "C" Series, Single-acting, Spring Return Cylinders



- Capacities up to 100 tons, strokes up to 16".
    - 100 ton (3 models) 2" - 10-1/4" stroke
    - 75 ton (2 models) 6-1/8" - 13-1/8" stroke
    - 55 ton (5 models) 2" - 13-1/4" stroke
    - 25 ton (8 models) 1" - 14-1/4" stroke
    - 15 ton (9 models) 1" - 16" stroke
    - 10 ton (8 models) 1" - 14-1/8" stroke
    - 5 ton (5 models) 1" - 9-1/4" stroke
  - Note: 55, 75 & 100 ton models have removable lifting handle.
  - Heavy duty return spring with max. number of coils.
  - All cylinders are in full compliance with ANSI B30.1.
- For reliable cylinders for every task the choice is Power Team's "C" series cylinders. With capacities from 5 to 100 tons and strokes from 1" to 16" you'll

find the one to suit your needs. These spring return cylinders all have a solid bronze bearing to reduce scoring caused by off center loads. The return spring has more coils for faster return and longer life. Each cylinder features a chrome plated piston rod to resist wear and corrosion. An interchangeable cylinder cap lets you choose from four heads to fit your application. To make your "C" series cylinder even more versatile there is a wide range of accessories available. These accessories thread onto the piston rod end or collar, or into the cylinder base, making the cylinder a real workhorse. Each cylinder is equipped with a 9796 quick coupler. All are designed for use at working pressures up to 10,000 psi.

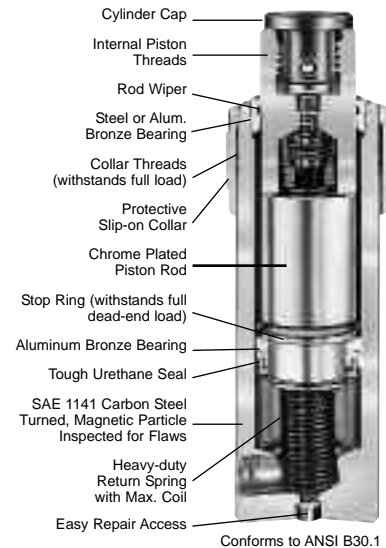
The following optional features are available on a special order basis. Please call for additional information.

- Cylinder bodies are available with Power Tech surface treatment (a special corrosion and abrasion resistant finish). Corrosion resistance is equivalent to ASTM BM117-85 one-hundred hour salt spray.
- Cylinders with special stroke lengths.
- Base mounting holes for 75 and 100 ton cylinders.

### Viton seal kits

You can now replace the seals in "C" series cylinders with Viton seals. Viton seals must be used when the application calls for fire resistant hydraulic fluid. Cylinder Caps (Furnished with cylinder)

5 ton .....No. 201375	55 ton .....No. 36161
10 ton .....No. 201362	75 ton .....No. 36161
15 ton .....No. 201362	100 ton .....No. 36161
25 ton .....No. 201412	



Base mounting Holes				
Cylinder Tonnage	No. Holes	Thread Size (in)	Thread Depth (in)	Bolt Circle Dia. (in)
5	2†	1/4 - 20	3/8	1
10	2†	5/16 - 18	1/2	1-9/16
15	2†	3/8 - 16	1/2	1-7/8
25	2†	1/2 - 13	3/4	2-5/16
55	2†	1/2 - 13	3/4	3-3/4
*Optional 75	4	3/4 - 10	1	4-1/2
*Optional 100	4	1 - 8	1	4-3/4

\* Consult factory (45° from coupler)  
† 90° from coupler

	A		B	C	D	E	F	G	H	J	K							
Cyl. Cap. (tons)	Stroke (in)	Order No.	Oil Cap. (cu. in.)	Retracted Height (in)	Extended Height (in)	Outside Dia. (in)	Piston Rod Dia. (in)	Piston Rod Int. Thread (in)	Piston Rod Protusion at Retracted Ht. (in)	Collar Thread (in)	Collar Thread Length (in)	Base to Inlet Port (in)	Piston Rod Thread Depth (in)	Bore Dia. (in)	Cyl. Eff. Area (sq. in)	Int. Press at Cap. (psi)	Tons at 10,000 psi	Prod. Wt. (lbs)
5	1	C51C	1.1	4-11/32	5-7/16	1-1/2	1	3/4 - 16	1/4	1-1/2 - 16	1-1/8	3/4	5/8	1-1/8	.994	10,061	4.97	2.25
5	3-1/4	C53C	3.2	6-1/2	9-3/4	1-1/2	1	3/4 - 16	1/4	1-1/2 - 16	1-1/8	3/4	5/8	1-1/8	.994	10,061	4.97	3.26
5	5-1/4	C55C	5.2	8-1/2	13-3/4	1-1/2	1	3/4 - 16	1/4	1-1/2 - 16	1-1/8	3/4	5/8	1-1/8	.994	10,061	4.97	4
5	7-1/4	C57C	7.2	10-3/4	18	1-1/2	1	3/4 - 16	1/4	1-1/2 - 16	1-1/8	3/4	5/8	1-1/8	.994	10,061	4.97	5
5	9-1/4	C59C	9.2	12-3/4	22	1-1/2	1	3/4 - 16	1/4	1-1/2 - 16	1-1/8	3/4	5/8	1-1/8	.994	10,061	4.97	5.8
10	1	C101C	2.2	3-5/8	4-5/8	2-1/4	1-1/2	1 - 8	1/4	2-1/4 - 14	1-1/8	3/4	3/4	1-11/16	2.236	8,948	11.2	4
10	2-1/8	C102C	4.8	4-3/4	6-7/8	2-1/4	1-1/2	1 - 8	1/4	2-1/4 - 14	1-1/8	3/4	3/4	1-11/16	2.236	8,948	11.2	5
10	4-1/8	C104C	9.2	6-3/4	10-7/8	2-1/4	1-1/2	1 - 8	1/4	2-1/4 - 14	1-1/8	3/4	3/4	1-11/16	2.236	8,948	11.2	6.7
10	6-1/8	C106C	13.7	9-3/4	15-7/8	2-1/4	1-1/2	1 - 8	1/4	2-1/4 - 14	1-1/8	3/4	3/4	1-11/16	2.236	8,948	11.2	9.4
10	8-1/8	C108C	19.9	11-3/4	19-7/8	2-1/4	1-1/2	1 - 8	1/4	2-1/4 - 14	1-1/8	3/4	3/4	1-11/16	2.236	8,948	11.2	11
10	10-1/8	C1010C	22.6	13-3/4	23-7/8	2-1/4	1-1/2	1 - 8	1/4	2-1/4 - 14	1-1/8	3/4	3/4	1-11/16	2.236	8,948	11.2	13
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10	14-1/8	C1014C	31.6	17-3/4	31-7/8	2-1/4	1-1/2	1 - 8	1/4	2-1/4 - 14	1-1/8	3/4	3/4	1-11/16	2.236	8,948	11.2	16.2
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15	2-1/8	C152C	6.7	5-7/8	8	2-3/4	1-3/4	1 - 8	1/4	2-3/4 - 16	1-1/8	3/4	3/4	2	3.142	9,549	15.7	8.9
15	4-1/8	C154C	12.9	7-7/8	12	2-3/4	1-3/4	1 - 8	1/4	2-3/4 - 16	1-1/8	3/4	3/4	2	3.142	9,549	15.7	11.5
15	6-1/8	C156C	19.2	10-11/16	16-13/16	2-3/4	1-3/4	1 - 8	1/4	2-3/4 - 16	1-1/8	3/4	3/4	2	3.142	9,549	15.7	15.3
15	8-1/8	C158C	25.5	12-11/16	20-13/16	2-3/4	1-3/4	1 - 8	1/4	2-3/4 - 16	1-1/8	3/4	3/4	2	3.142	9,549	15.7	17.9
15	10-1/8	C1510C	31.8	14-11/16	24-13/16	2-3/4	1-3/4	1 - 8	1/4	2-3/4 - 16	1-1/8	3/4	3/4	2	3.142	9,549	15.7	20.7
15	12-1/8	C1512C	38.1	16-11/16	28-13/16	2-3/4	1-3/4	1 - 8	1/4	2-3/4 - 16	1-1/8	3/4	3/4	2	3.142	9,549	15.7	23.2
15	14-1/8	C1514C	44.4	18-11/16	32-13/16	2-3/4	1-3/4	1 - 8	1/4	2-3/4 - 16	1-1/8	3/4	3/4	2	3.142	9,549	15.7	26
15	16	C1516C	50.3	20-9/16	36-9/16	2-3/4	1-3/4	1 - 8	1/4	2-3/4 - 16	1-1/8	3/4	3/4	2	3.142	9,549	15.7	28.2
25	1	C251C	5.1	5-1/2	6-1/2	3-3/8	2-1/4	1-1/2 - 16	3/8	3-5/16 - 12	1-15/16	1	1	2-9/16	5.15	9,699	25.8	11.9
25	2	C252C	10.3	6-1/2	8-1/2	3-3/8	2-1/4	1-1/2 - 16	3/8	3-5/16 - 12	1-15/16	1	1	2-9/16	5.15	9,699	25.8	13.9
25	4	C254C	20.6	8-1/2	12-1/2	3-3/8	2-1/4	1-1/2 - 16	3/8	3-5/16 - 12	1-15/16	1	1	2-9/16	5.15	9,699	25.8	17.6
25	6-1/4	C256C	32.2	10-3/4	17	3-3/8	2-1/4	1-1/2 - 16	3/8	3-5/16 - 12	1-15/16	1	1	2-9/16	5.15	9,699	25.8	21.7
25	8-1/4	C258C	42.5	12-3/4	21	3-3/8	2-1/4	1-1/2 - 16	3/8	3-5/16 - 12	1-15/16	1	1	2-9/16	5.15	9,699	25.8	25.6
25	10-1/4	C2510C	52.8	14-3/4	25	3-3/8	2-1/4	1-1/2 - 16	3/8	3-5/16 - 12	1-15/16	1	1	2-9/16	5.15	9,699	25.8	29.3
25	12-1/4	C2512C	63.2	16-3/4	29	3-3/8	2-1/4	1-1/2 - 16	3/8	3-5/16 - 12	1-15/16	1	1	2-9/16	5.15	9,699	25.8	33.1
25	14-1/4	C2514C	73.5	18-3/4	33	3-3/8	2-1/4	1-1/2 - 16	3/8	3-5/16 - 12	1-15/16	1	1	2-9/16	5.15	9,699	25.8	36.8
55	2	C552C	22.1	6-7/8	8-7/8	5	3-1/8	NONE	1/8	5 - 12	2-3/16	1-3/8	NONE	3-3/4	11.04	9,659	55.2	32.5
55	4-1/4	C554C	46.9	9-1/8	13-3/8	5	3-1/8	NONE	1/8	5 - 12	2-3/16	1-3/8	NONE	3-3/4	11.04	9,659	55.2	41.3
55	6-1/4	C556C	69.0	11-1/8	17-3/8	5	3-1/8	NONE	1/8	5 - 12	2-3/16	1-3/8	NONE	3-3/4	11.04	9,659	55.2	51
55	10-1/4	C5510C	113.2	15-1/8	25-3/8	5	3-1/8	NONE	1/8	5 - 12	2-3/16	1-3/8	NONE	3-3/4	11.04	9,659	55.2	67
55	13-1/4	C5513C	146.3	18-1/8	31-3/8	5	3-1/8	NONE	1/8	5 - 12	2-3/16	1-3/8	NONE	3-3/4	11.04	9,659	55.2	78
75	6-1/8	C756C	97.4	18-1/8	18-1/2	5-3/4	3-3/4	NONE	1/8	5-3/4 - 12	1-3/4	1-1/4	NONE	4-1/2	15.90	9,434	79.5	73.5
75	13-1/8	C7513C	208.7	19-3/8	32-1/2	5-3/4	3-3/4	NONE	1/8	5-3/4 - 12	1-3/4	1-1/4	NONE	4-1/2	15.90	9,434	79.5	109.5
100	2	C1002C	41.2	8-5/8	10-5/8	6-1/4	4-1/8	NONE	1/8	6-1/4 - 12	2-1/4	1-5/8	NONE	5-1/8	20.62	9,695	103.1	63
100	6-5/8	C1006C	137.0	13-1/4	19-7/8	6-1/4	4-1/8	NONE	1/8	6-1/4 - 12	2-1/4	1-5/8	NONE	5-1/8	20.62	9,695	103.1	91
100	10-1/4	C10010C	211.5	16-7/8	27-1/8	6-1/4	4-1/8	NONE	1/8	6-1/4 - 12	2-1/4	1-5/8	NONE	5-1/8	20.62	9,695	103.1	113

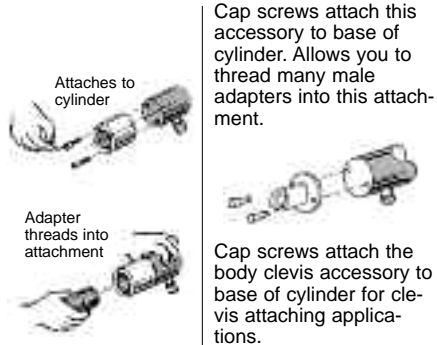
**Hydraulics**

# Cylinders

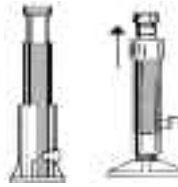
## Cylinder mounting accessories "C" Series Cylinders

- The accessories permit additional flexibility in the application of Power Team hydraulic cylinders to perform a wide variety of tasks.
- Rated for full capacity (10,000 psi) of cylinders, making them more versatile than they are already.
- \* Accessories attach directly onto cylinder top or bottom.

### Cylinder base or body attachment



Support base helps hold cylinder in an upright position by increasing the flat base area. Swivel cap tilts 5° to help reduce the effect that off-center loading will have on a hydraulic cylinder.



**! Caution:** Lifting loads where the base of the cylinder is not parallel with the surface of the load engaged by the cylinder lifting cap is NOT recommended. If you must lift such a load, be aware that even with the use of a swivel cap, the cylinder can "kick out" from beneath the load and cause serious personal injury and/or property damage.

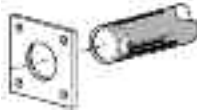
### Spreading applications

Spreading application with two cylinder flat bases, threaded adapter, cylinder base attachment and threaded connector/ or extension rod.



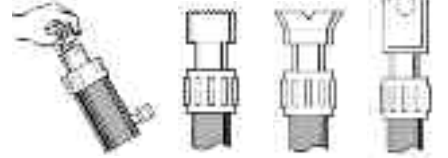
### Fixed applications

Cylinder mounting plate threads to the cylinder body, for fixed application.



### Threaded adapter

Easily threads into threaded plunger end of cylinder. You are now ready to attach the saddles shown.



Piston Clevis Threads into piston rod for clevis attaching applications

### Lifting applications

Illustration shows lifting application using cylinder flat base, cylinder base attachment and threaded tube coupling.

<b>1) Extension Rod</b> 	<b>2) Cylinder Base attachment</b> 
<b>3) Swivel Cap</b> 	<b>4) 90° "v" Base</b> 
<b>5) Cylinder flat Base</b> 	<b>6) Plunger Base</b> 
<b>7a) Threaded adapters</b> 	<b>7b) Threaded adapters</b> 
<b>8) Serrated Saddle</b> 	<b>9) Threaded Connector</b> 
<b>10) Support Base</b> 	<b>11) Piston Clevis</b> 
<b>12) Body Clevis</b> 	<b>13) Cylinder mounting Plate</b> 

Item No.	Cyl. Tonnage	Order (in)	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)
1	5	350895	5	7/8 Dia.	3/4 - 14 NPT	21/64 Dia.	2	-
1	5	38908	10	7/8 Dia.	3/4 - 14 NPT	21/64 Dia.	2	-
1	5	350896	18	7/8 Dia.	3/4 - 14 NPT	21/64 Dia.	2	-
1	10	350897	5	1-7/16 Dia.	1-1/4 - 11-1/2 NPT	21/64 Dia.	2	-
1	10	38909	10	1-7/16 Dia.	1-1/4 - 11-1/2 NPT	21/64 Dia.	2	-
1	10	350898	18	1-7/16 Dia.	1-1/4 - 11-1/2 NPT	21/64 Dia.	2	-
2†	5	208380	1-5/8	1-3/4 Dia.	3/4 - 14 NPSM	9/32 Dia.(2)1/4 - 20 UNC x 3/4 Lg. Socket Head Cap Screws	-	-
2†	10	208381	1-7/8	2-1/2 Dia.	1-1/4 - 11-1/2 NPSM	11/32 Dia.(2)5/16 - 18 UNC x 3/4 Lg. Socket Head Cap Screws	-	-
2†	25	208382	2-3/8	3-7/8 Dia.	2 - 11-1/2 NPSM	17/32 Dia.(2) - 13 UNC x 1 Lg. Socket Head Cap Screws	-	-
3	10 or 15	350144	7/8	1-3/8	-	-	-	-
3	25	350145	1-1/8	2	-	-	-	-
3	55 or 75	350376	1-1/4	2-13/16	-	-	-	-
4	5	25388*	1-3/8	1-1/16	3/4 - 14 NPSM	-	-	-
4	10	25395*	2-1/8	2-1/8	1-1/4 - 11-1/2 NPSM	-	-	-
5	5	25750	4-1/2	2-1/2	3/4 - 14 NPSM	1-11/32	-	-
5	10	32325	6-9/16	3-1/2	1-1/4 - 11-1/2 NPSM	1-7/16	-	-
6	25	25652	6	1-1/4	2 - 11-1/2 NPSM	-	-	-
7a	5	202178	1-5/8	1-1/8	1-1/16 Dia.	3/4 - 14 NPT	3/4 - 16 UNF-2A	-
7a	10 or 15	202179	1-13/16	1-1/16	1-5/8 Dia.	1-1/4 - 11-1/2 NPT	1 - 8 UNC-2A	-
7a	25	202180	2-3/4	1-7/8	2-3/8 Dia.	2 - 11-1/2 NPT	1-1/2 - 16 UN-2A	-
7b	10 or 15	350724	2	1-1/4	1-31/64 Dia.	-	1 - 8 UNC-2A	-
7b	25	350723	2-1/8	1-1/4	2-1/4 Dia.	-	1-1/2 - 16 UN-2A	-
8	5	25746*	1-1/8	1-5/16 Dia.	3/4 - 14 NPSM	-	-	-
8	10 or 15	31772*	1-1/8	2 Dia.	1-1/4 - 11-1/2 NPSM	-	-	-
8	25	31776*	1-5/16	3 Dia.	2 - 11-1/2 NPSM	-	-	-
9	5	25748	1-3/4	7/8 Dia.	3/4 - 14 NPSM	3/16 Dia.	1/2	-
9	10	25664	1-5/8	1-7/16 Dia.	1-1/4 - 11-1/2 NPSM	5/16 Dia.	9/16	-
9	25	25654	2-1/4	2-1/8 Dia.	2 - 11-1/2 NPSM	3/8 Dia.	5/8	-
10	10	420062	7	5	-	7/16	-	-
10	25	420063	7	5	-	7/16	-	-
11	5	350095	1-3/4	1-1/8	5/8	1-7/16	5/8	9/16
11	10 or 15	350094	2-9/16	1-11/16	7/8	2-5/16	1	1
11	25	420059	2-15/16	2-1/4	1-1/4	2-11/16	1-1/4	1-1/2
12†	5	350096	2-1/16	1-1/8	5/8	5/8	9/16	1/4
12†	10	350097	3	1-11/16	7/8	1	1	1/4
12†	15	350098	3-1/16	1-11/16	7/8	1	1	1/4
12†	25	420061	3-9/16	2-1/4	1-1/4	1-1/4	1-1/2	1/4
13	5	350099	3	1	2-1/8	1-1/2 - 16 UN-2B	11/32	-
13	10	350100	3-1/2	1	2-5/8	2-1/4 - 14 UNS-2B	11/32	-
13	15	350184	3-1/2	1	2-5/8	2-3/4 - 16 UN-2B	11/32	-
13	25	420064	5	2	3-21/32	3-5/16 - 12 UN-2B	21/32	-

\* Items must be used with thread adapter (item no.7a). † Mounting screws are included.

# Cylinders

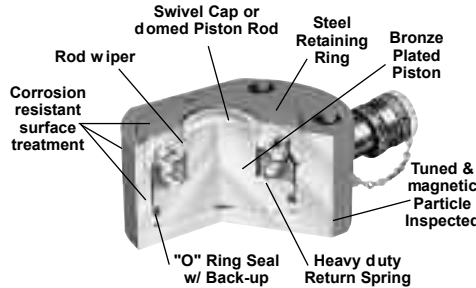
## Low Profile, Single Action RLS - Spring Return Cylinders

10, 20, & 30 Ton



- Low profile for tight-spot lifting.
- Unique heavy duty spring gives fast cylinder return.
- Couplers angled upward for extra clearance.
- New design reduces problems with off-center loading.
- All cylinders are in full compliance with ANSI B30.1. All RLS series cylinder bodies and gland nuts are manufactured with Power Tech surface treatment (a special corrosion and abrasion resistant finish). Corrosion resistance is equal to ASTM B 117-85 100 hour salt spray.

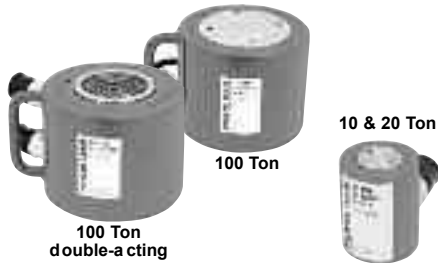
The RLS series gives you plenty of choice for a low profile, spring return cylinder. With capacities from 5 to 150 tons and strokes from 7/16" to 5/8", these cylinders give you brute force in a compact unit. These single acting cylinders are ideal for use where clearance is limited. On all cylinders but the RLS50 the coupler is angled upward for extra coupling clearance. The cylinders are designed for maximum working pressures up to 10,000 psi.



mounting Holes	
RLS50	11/32" C'bore x 1/4" deep, 7/32" thru hole
RLS100	27/64" C'bore x 11/32" deep, 9/32" thru hole
RLS200	39/64" C'bore x 13/32" deep, 13/32" thru hole
RLS300	39/64" C'bore x 7/16" deep, 13/32" thru hole
RLS500S	45/64" C'bore x 1/2" deep, 15/32" thru hole
RLS750S	51/64" C'bore x 9/16" deep, 17/32" thru hole
RLS1000S	51/64" C'bore x 9/16" deep, 17/32" thru hole
RLS1500S	13/16" C'bore x 9/16" deep, 17/32" thru hole

Cyl. Cap. (tons)	Stroke (in)	Order No.	A		B		C		D		E&F		G		H		J		K		L		Bore Dia. (in)	Cyl. Eff. Area (sq. in)	Oil Cap. (cu. in)	Int. Press at Cap. (psi)	Tons at 10,000 psi	Prod. Wt. (lbs)
			Extended Height (in)	Retracted Height (in)	Piston Rod Dia. (in)	Base to Inlet Port (in)	Outside Dia. (in)	Mounting Hole Location (in)	Coupler Offset (degree)																			
5	9/16	RLS50	2-3/16	1-5/8	5/8	3/4	1-5/8 x 2-9/16	3/4	1-1/8	1/4	1	NONE	1-1/8	.994	.62	10.061	4.97	2.2										
10	7/16	RLS100	2-3/16	1-3/4	3/4	5/8	2-3/16 x 3-1/4	11/16	1-7/16	3/8	1-5/8	5°	1-11/16	2.236	1.0	8.943	11.18	3.3										
20	7/16	RLS200	2-7/16	2	1-1/8	21/32	3 x 4	23/32	1-15/16	17/32	1-9/16	5°	2-3/8	4.430	2.0	9.029	22.15	5.6										
30	1/2	RLS300	2-13/16	2-5/16	1-3/8	23/32	3-3/4 x 4-1/2	13/16	2-1/16	27/32	1-3/4	10°	2-7/8	6.492	3.2	9.242	32.46	8.6										
50	5/8	RLS500S	3-1/4	2-5/8	1-3/4	27-32	4-1/2 x 5-1/2	15/16	2-5/8	15/16	2-1/8	10°	3-1/2	9.621	6.0	10.394	48.10	14										
75	5/8	RLS750S	3-3/4	3-1/8	2-1/8	1	5-17/32 x 6-1/2	15/16	3	1-17/64	2-19/32	10°	4-1/2	15.904	9.9	9.431	79.52	23.3										
100	5/8	RLS1000S	4	3-3/8	2-1/2	1	6 x 7	13/16	3	1-1/2	2-13/16	4°	5	19.635	12.3	10.186	98.17	30										
150	9/16	RLS1500S	4-9/16	4	3	1-5/16	7-1/2 x 8-1/2	1-5/16	4-5/8	1-7/16	3-1/8	10°	6-1/4	30.680	17.2	9.778	153.39	52										

## "Shorty" Spring Return Cylinders - RSS



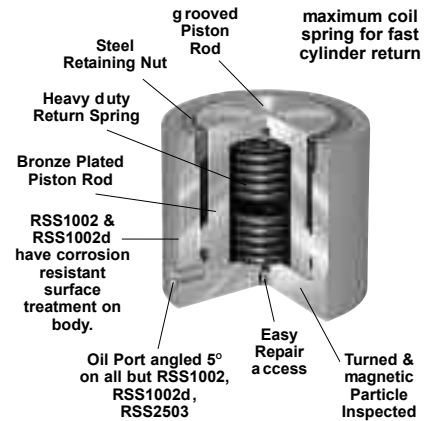
- All include heavy duty spring for fast cylinder return (except RSS1002D).
- Capacities up to 250 tons, strokes up to 3".
- All cylinders are in full compliance with ANSI B30.1.
- 5° angled oil port provides extra clearance.\*
- RSS1002 & RSS1002D cylinder bodies are manufactured with Power Tech surface treatment (a special corrosion and abrasion resistant finish). Corrosion resistance is equal to

ASTM B117-85 100 hour salt spray. All other RSS cylinder bodies are available with the same corrosion and abrasion resistance through special order. Please call for additional information.

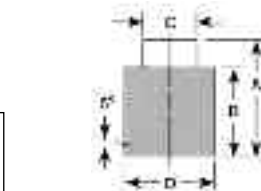
- Optional swivel caps available for all cylinders.

Forcing a gravity return cylinder to retract wastes time and money. The Power Team RSS series of single acting spring return cylinders eliminates that waiting. We've incorporated the return spring and kept the low collapsed height and strokes you need. You get capacities from 10 to 250 tons. They include bronze plated piston rods to resist scoring and corrosion. They can be dead-ended at full capacity. Each RSS (except RSS1002, RSS1002D & RSS2503) has an angled coupler port (5°) for easy hook-up. Strokes range from 1-1/2" to 3". If you're tired of waiting for your cylinders to retract, look into the RSS series today.

- Cribbing block sets and swivel caps for use with the "Shorty" cylinders.
- \* Oil port angled 5° on all but RSS1002, RSS1002D and RSS2503



Cyl. Cap (tons)	Stroke (in)	Order No.	A		B		C		D		Cyl. Eff. Area (sq. in)	Return Cyl. Eff. Area (sq. in)	Oil Cap. (cu. in)	Int. Press at Cap. (psi)	Tons at 10,000 psi	Oil Port NPTF	Type Piston Return	Prod. Wt. (lbs)
			Extended Height (in)	Retracted Height (in)	Piston Rod Dia. (in)	Outside Dia. (in)												
10	-	1-1/2	RSS101	5	3-1/2	1-1/2	2-3/4	2.24	-	3.4	8,943	11.2	3/8" - 18	Spring	6			
20	-	1-3/4	RSS202	5-1/2	3-3/4	2-5/32	3-9/16	4.43	-	7.7	9,029	22.1	3/8" - 18	Spring	9.9			
30	-	2-7/16	RSS302	7-1/16	4-5/8	2-1/2	4	6.49	-	15.8	9,243	32.5	3/8" - 18	Spring	14.7			
50	-	2-3/8	RSS502	7-3/8	5	3-1/8	4-7/8	9.62	-	22.8	10,393	48.1	3/8" - 18	Spring	23.2			
100	-	2-1/4	RSS1002	7-3/4	5-1/2	4-3/8	6-5/8	19.63	-	44.2	10,186	98.2	3/8" - 18	Spring	47.3			
100	43	1-1/2	RSS1002D	7-3/16	5-11/16	3-3/4	6-7/8	19.63	8.6	29.4	10,186	98.2	3/8" - 18	Hyd.	54.6			
250	-	3	RSS2503	14-7/16	11-7/16	5-1/2	9-7/8	50.22	-	150.6	9,956	251.1	3/8" - 18	Spring	220			



Piston Cap Mounting Holes				
Cyl. No.	No.	Size	Depth (in)	B.C. Dia. (in)
RSS101	2	#6 - 32	1/4	1.072
RSS202	2	#10 - 24	3/8	1.592
RSS302	2	1/4 - 20	3/8	1.862
RSS502	4	1/4 - 20	3/8	2.424
RSS1002	4	5/16 - 18	3/8	3.558
RSS1002D	NA	-	-	-
RSS2503	NA	-	-	-

## Hydraulics

# Cylinders

### Cribbing Block Sets

- Convert hydraulic cylinders into stable mechanical cribbing devices.
- Sets give stable load support and increase cylinder stroke.
- For use with Power Team "Shorty" cylinders.

These cribbing block sets are just what you need to support large and heavy loads. The grooved support rings act as a more stable cribbing device than timbers or other methods. The stacking pads act as cylinder extensions, increasing the stroke of the cylinder. These sets eliminate the need for heavy, awkward cribbing devices and can reduce cribbing time dramatically. First, extend the cylinder and insert the bottom supporting ring. Then retract the cylinder and insert a stacking pad. Extend the cylinder again, with the pad increasing the cylinder stroke. The process is repeated until all rings and pads are used. The insertion handle is used for inserting the rings and pads. These sets are faster and easier to use than any makeshift method.

Three sets are available in 30, 50 and 100

ton capacities. They are for use with Power Team Shorty Cylinders, No. RSS302, RSS502 and RSS1002.

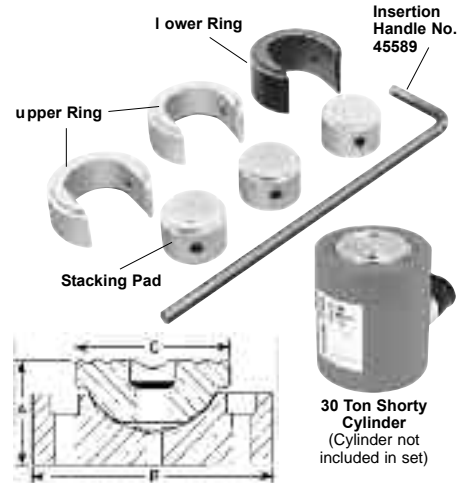
### Swivel caps for RSS Series Power Team hydraulic cylinders

- Reduce effects of off-center loads.
- The use of these caps, which are designed to tilt a maximum of 5 degrees, will help reduce the effect that off-center loading will have on RSS Series cylinders.

Radial grooves machined into the top of the swivel cap lessen the tendency of an off-center load to slip. A notch across the face of each cap helps keep a load having a protruding or round shape centered.

**NOTE:** Swivel caps cannot be used with cribbing blocks.

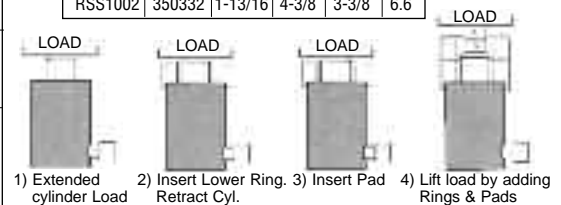
**! Caution:** Lifting loads where the base of the cylinder is not parallel with the surface of the load engaged by the cylinder lifting cap is NOT recommended. If you must lift such a load, be aware that even with the use of a swivel cap, the cylinder can "kick out" from beneath the load and cause serious personal injury and/or property damage.



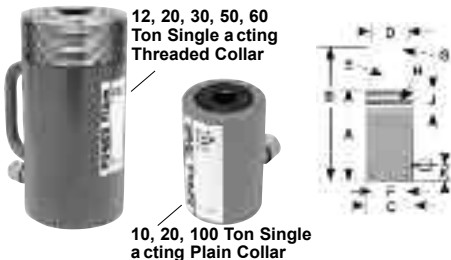
Use with Cyl. No.	Order No.	A (in)	B (in)	C (in)	D (lbs)
RSS101	350320	1	1-7/16	1-7/16	.5
RSS202	350321	1-3/8	2-1/8	2-1/8	1.3
RSS302	350322	1-3/8	2-1/2	2-1/8	1.6
RSS502	350331	1-7/16	3-1/4	2-1/8	2.7
RSS1002	350332	1-13/16	4-3/8	3-3/8	6.6

For use with -	30 ton Cylinder No. RSS302			50 ton Cylinder No. RSS502			100 ton Cylinder No. RSS1002		
	Order Number -	30 ton Set No. CB30		50 ton Set No. CB50			100 ton Set No. CB100		
	Lower Ring	Upper Ring	Stacking Pad	Lower Ring	Upper Ring	Stacking Pad	Lower Ring	Upper Ring	Stacking Pad
No. Included in Set	1	2	3	1	2	3	1	3	4
Outside Dia. (in)	4-1/2	4-1/2	2-3/4	5-1/2	5-1/2	3-3/8	7-25/64	7-25/64	4-3/4
Inside Dia. (in)	2-13/16	2-13/16	-	3-29/64	3-29/64	4-13/16	4-13/16	4-13/16	-
Height, each (in)	2-9/32	1-51/64	1-25/32	2-7/32	1-23/32	1-11/16	2-1/8	1-3/4	1-23/32
Total Stacked Height of Rings in Set (in)	5-7/16			5-3/16			6-7/8		
Weight of Set (lbs)	20			28			64		

Each set includes one Insertion Handle No. 45589 - 1/2" Hex. X 18" Long, 4" Bend



### Single-acting "Center-Hole" Cylinders - RH



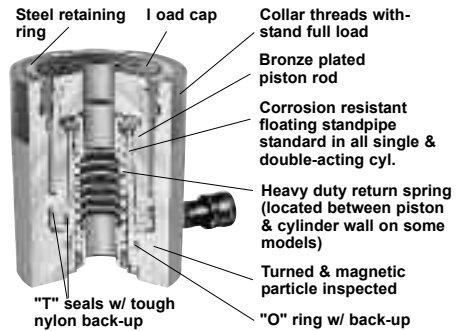
- Center hole permits extending screws, cables, etc. straight through cylinder.
- All cylinders are in full compliance with ANSI B30.1.
- Withstands full dead-end loads.
- Corrosion resistant standpipe standard on all models.

From top to bottom these RH series cylinders have features you want. Like interchangeable piston head inserts for versatility and tapped base mounting holes for easy installation. All RH series cylinders have plated piston rods which resist wear, and superior packings and seals for high cycle life without leakage. Power Tech corrosion resistant floating standpipe is standard on all single and double-acting center-hole cylinders (corrosion resistance is equal to ASTM B117-85 100 hour salt spray). All (except RH120) are furnished with a 9796 quick-coupler. Plain head inserts are standard on all RH cylinders.

**New RHa306** cylinder has an aluminum cylinder body and piston rod. This makes it almost half the weight of a comparable steel cylinder.

**No. 4213120R9** - Optional lifting handle for RH302 and RH306 cylinders.

**No. 252215** - Lifting handle for RHA306 cylinders.



Cyl. Cap. (tons)	Stroke (in)	Order No.	A	B	C	D	E	F	G	H	J	Oil Cap. (cu. in)	Int. Press at Cap. (psi)	Tons at 10,000 psi	Base to Inlet Port (in)	Base Mounting Holes (in)	Cyl. Eff. Area (sq. in)	Prod. Wt. (lbs)
			Retracted Height (in)	Extended Height (in)	Out-side Dia. (in)	Piston Rod Dia. (in)	Center Hole Dia. (in)	Inches Between Base Holes	Insert Thread Size (in)	Collar Thread (in)	Thread Length (in)							
10	2-1/2	RH102	5-5/16	7-13/16	3	2-1/16	49/64	2-3/8	1-3/4 - 12	none	none	5.52	9,054	11	1	1/4 - 20	2.21	9
10	8	RH108	11-5/16	19-5/16	3	2-1/16	49/64	2-3/8	1-3/4 - 12	none	none	17.68	9,054	11	1	1/4 - 20	2.21	18.7
12	5/16	RH120**	2-3/16	2-1/2	2-3/4	1-3/8	11/16	2	3/4 - 16	2-3/4 - 16	1-1/4	.87	8,692	13.8	3/8	5/16 - 18	2.76	3.0
12	1-5/8	RH121	4-13/16	6-7/16	2-3/4	1-3/8	51/64	none	none	2-3/4 - 16	1-1/4	4.49	8,692	13.8	1	none	2.76	6.6
12	1-5/8	RH121T**	4-13/16	6-7/16	2-3/4	1-3/8	13/16	none	3/4 - 16	2-3/4 - 16	1-1/4	4.49	8,692	13.8	1	none	2.76	6.6
20	2	RH202	6-1/8	8-1/8	3-7/8	2-1/8	1-5/64	3-1/4	1-9/16 - 16	3-7/8 - 12	1-1/2	9.45	8,466	23.6	1	3/8 - 16	4.72	20.0
20	3	RH203	6-1/16	9-1/16	4	2-3/4	1-3/64	3-1/4	2-1/4 - 12	none	none	11.76	10,186	19.6	1	3/8 - 16	3.92	16.1
20	6	RH206	12-1/8	18-1/8	3-7/8	2-1/8	1-5/64	3-1/4	1-9/16 - 16	3-7/8 - 12	1-1/2	28.35	8,466	23.6	1	3/8 - 16	4.72	30.2
30	2-1/2	RH302	6-1/4	8-3/4	4-3/4	3-1/4	1-19/64	3-5/8	3-3/4 - 12	4-3/4 - 12	1-1/2	15.85	9,457	31.7	1-5/32	7/16 - 20	6.34	25.6
30	5-7/8	RHA306	11-5/32	17-1/32	5-1/8	3-1/4	1-9/32	none	5-5/8 - 8UN	none	none	38.1	9,457	31.7	1-1/4	none	6.34	21.9
30	6	RH306	9-3/4	15-3/4	4-3/4	3-1/4	1-9/32	3-5/8	3-3/4 - 12	4-3/4 - 12	1-1/2	38.1	9,457	31.7	1-5/32	7/16 - 20	6.34	39
50	3	RH503	7-1/8	10-1/8	6	4-1/8	1-43/64	4-3/4	3-1/4 - 12	6 - 12	2	32.58	9,208	54.3	1-1/4	5/8 - 18	10.86	46.6
60	3	RH603*	9-1/4	12-1/4	6-1/4	3-19/32	2-1/8	5-1/8	3 - 12	6-1/4 - 12	2-1/2	37	9,750	61.6	1	1/2 - 13	12.31	60
60	6	RH606*	12-1/4	18-1/4	6-1/4	3-19/32	2-1/8	5-1/8	3 - 12	6-1/4 - 12	2-1/2	73.86	9,750	61.6	1	1/2 - 13	12.13	78
100	3	RH1003*	10	13	8-3/8	5	3-1/8	none	4-1/8 - 12	none	none	61.8	9,700	103.1	1-1/4	none	20.62	115

\* These cylinders supplied with carrying handles.

\*\* RH120 and RH121T do not have an internal threaded insert, but do have a 3/4 - 16 internal thread. The RH120 inlet port is 1/4" NPTF.



# Cylinders

## double-acting "Center-Hole" Cylinders - "RH" Series



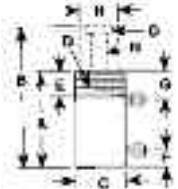
30, 60, 100, 150, 200 Ton double-acting Plain Collar



30, 60, 100 Ton double-acting Threaded Collar

- For working pressures to 10,000 psi. Capacities of 30 to 200 tons, stroke lengths of 1.50" to 10.13".
- "Center-Hole" design allows you to run cables, screws, etc., through the center of the cylinder, enabling cylinder to push or pull, if a pull rod is used.
- Built-in safety feature prevents over-pressurization of the retract circuit. Cylinders withstand full "dead-end" loads, comply with ASME B30.1 standard.
- Interchangeable piston head inserts provide versatility of application, tapped base mounting holes simplify installation. Plain head inserts are standard.

- Plated piston rod resists wear, superior packings provide high cycle life without leakage.
- Corrosion-resistant standpipe has Power Tech surface treatment.
- New aluminum cylinder (No. RHA604D) is light in weight for portability.
- Each cylinder has two 9796 3/8" NPTF female half couplers. The 60 thru 200 ton models are equipped with removable carrying handles. **421312OR9** - Optional lifting handle for RH303 and RH306D cylinder.



Cyl. Cap. (tons)	Push	Pull	Stroke (in)	Order No.	Oil Cap. (cu. in)		A	B	C	D	E	F	G	H	N	O	Mounting Holes & Bolt Circle (in)	Cylinder Effective (sq. in.)		Internal Pressure at Cap (psi)		Tons at 10,000 psi (in)		Prod. Wt. (lbs)
					Re-traced Ht. (in)	Ex-tended Ht. (in)	Outside Dia. (in)	Collar Thread (in)	Collar Thread Length (in)	Base to Port (in)	Cylinder Top to Port (in)	Piston Rod Dia. (in)	Center Hole Dia. (in)	Insert Thread Size (in)	Push	Pull		Push	Pull	Push	Pull			
30	15	3.00	RH303	17.6	10.2	7.06	10.06	4.75	none	none	1.00	1.63	2.50	1.28	2-12	3/8-16x3.63	5.89	3.83	10,200	8,876	29.5	16.9	29.8	
30	15	6.00	RH306D	35.3	20.3	11.06	17.06	4.75	none	none	1.00	1.63	2.50	1.28	2-12	7/16-20x3.63	5.89	3.83	10,200	8,876	29.5	16.9	45.0	
30	20	10.13	RH3010	66.0	41.0	17.25	27.38	4.50	4-1/2-12	1.63	1.75	3.19	2.38	1.31	1-7/8-16	none	6.54	4.04	9,174	9,901	32.7	20.2	61.0	
60	25	4.00	RHA604D	49.2	20.6	9.50	13.50	7.00	none	none	1.56	2.25	4.00	2.13	3-12	none	12.31	5.15	9,750	9,709	61.5	25.7	35.6	
60	25	5.00	RH605*	61.6	25.8	9.50	14.50	6.53	none	none	1.00	1.75	4.00	2.13	3-12	1/2-13x5.13	12.31	5.15	9,750	9,709	61.5	25.7	73.0	
60	40	10.13	RH6010*	133.0	87.0	18.06	28.19	6.25	6-1/4-12	1.88	2.13	3.63	2.14	3-16	none	13.14	8.59	9,132	9,313	65.7	42.9	120.0		
100	45	1.50	RH1001*	32.1	14.2	6.50	8.00	8.38	none	none	1.25	2.31	5.00	3.13	4-16	none	21.39	9.43	9,350	9,544	106.9	47.1	85.0	
100	50	6.00	RH1006*	120.2	65.6	12.38	18.38	7.25	none	none	1.47	2.33	4.38	2.06	none	1/2-13x5.50	20.03	10.93	9,986	9,150	100.1	54.7	95.0	
100	45	10.13	RH10010*	216.6	95.5	19.50	29.63	8.50	8-1/2-12	2.25	2.50	3.61	5.50	3.14	4-1/2-12	none	21.39	9.43	9,350	9,544	106.9	47.1	240.0	
150	70	5.00	RH1505*	150.9	73.6	12.25†	17.25	8.50	none	none	1.47	2.69	5.50	2.56	none	none	30.10	14.70	9,937	9,524	150.9	73.6	148.0	
150	75	8.00	RH1508*	239.6	127.2	13.75	21.75	9.75	none	none	1.55	2.41	6.00	3.14	5-12	none	29.95	15.90	10,015	9,434	149.8	79.5	227.0	
200	75	8.00	RH2008*	323.6	127.6	16.06	24.06	10.75	none	none	2.25	3.22	7.50	4.05	6-12	1-1/4-12x7.75	40.45	15.95	9,888	9,404	202.3	79.8	311.0	

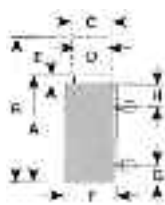
\* These cylinders supplied w/ carrying handles † Measured w/ 0.75" high serrated insert installed

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Hydraulics

## double-acting Cylinders - "R" Series



150 Ton Capacity



- Built-in safety relief valve prevents accidental over-pressurization of the retract circuit.
- All cylinders are in full compliance with ANSI B30. 1.
- Withstands full dead-end load.
- Swivel caps are standard on all "R" series double-acting cylinders.
- Hard chrome plated piston rods standard on all "R" series double-acting cylinders.

**Stroke lengths up to 13" are available for all tonnages.**

Each "R" series double-acting cylinder includes a swivel cap, two No. 9798 quick couplers and two lifting eyes. The swivel cap can reduce the effect of off-center loading. Standard swivel caps can tilt 5° maximum. Radial grooves machined into the top of the swivel cap can reduce load slippage.

Cyl. Cap. (tons)	Stroke (in)	Order No.	Nom. Retracted Ht. (in)		Nom. Extended Ht. (in)		Bore Dia. (in)	Piston Dia. (in)	Std. Swivel Ht. above Body (in)	Outside Dia. (in)	Base to Inlet Port (in)		Top of Body to Return Port (in)		Cyl. Effective Area (sq. in.)		Oil Cap. Est. (cu. in)		Prod. Wt. (lbs)
			Push	Pull	Push	Pull					Push	Pull	Push	Pull	Push	Pull			
100	2	R1002D	6-41/64	8-41/64	5-1/8	3-3/4	9/32	6-1/2	1	2-13/64	20.6	9.6	41.2	19.2	54				
100	6	R1006D	10-41/64	16-41/64	5-1/8	3-3/4	9/32	6-1/2	1	2-13/64	20.6	9.6	123.6	57.6	81				
100	10	R10010D	14-41/64	24-41/64	5-1/8	3-3/4	9/32	6-1/2	1	2-13/64	20.6	9.6	206.0	96.0	108				
150	2	R1502D	7-7/16	9-7/16	6-1/4	4-1/2	19/64	8-1/16	1-1/4	2-1/4	30.7	14.8	61.4	29.6	95				
150	6	R1506D	11-7/16	17-7/16	6-1/4	4-1/2	19/64	8-1/16	1-1/4	2-1/4	30.7	14.8	184.2	88.8	136				
150	10	R15010D	15-7/16	25-7/16	6-1/4	4-1/2	19/64	8-1/16	1-1/4	2-1/4	30.7	14.8	307.0	148.0	177				
200	2	R2002D	8-9/64	10-9/64	7-1/4	5-1/4	11/32	9-1/4	1-5/8	2-5/16	41.3	19.6	82.6	39.2	136				
200	6	R2006D	12-9/64	18-9/64	7-1/4	5-1/4	11/32	9-1/4	1-5/8	2-5/16	41.3	19.6	247.8	117.6	187				
200	10	R20010D	16-9/64	26-9/64	7-1/4	5-1/4	11/32	9-1/4	1-5/8	2-5/16	41.3	19.6	413.0	196.0	239				
280	2	R2802D	9-13/16	11-13/16	8-1/2	6-1/2	13/32	10-7/8	1-7/8	2-3/7/64	56.7	23.6	113.4	47.2	219				
280	6	R2806D	13-13/16	19-13/16	8-1/2	6-1/2	13/32	10-7/8	1-7/8	2-3/7/64	56.7	23.6	340.2	141.6	297				
280	10	R28010D	17-13/16	27-13/16	8-1/2	6-1/2	13/32	10-7/8	1-7/8	2-3/7/64	56.7	23.6	567.0	236.0	376				
355	2	R3552D	11-13/32	13-13/32	9-1/2	7-3/4	7/16	11-3/4	2-1/8	2-3/4	70.9	23.7	141.8	47.4	324				
355	6	R3556D	15-13/32	21-13/32	9-1/2	7-3/4	7/16	11-3/4	2-1/8	2-3/4	70.9	23.7	425.4	142.2	421				
355	10	R35510D	19-13/32	29-13/32	9-1/2	7-3/4	7/16	11-3/4	2-1/8	2-3/4	70.9	23.7	709.0	237.0	517				
430	2	R4302D	12-21/64	14-21/64	10-1/2	8-1/2	15/32	13	2-1/2	2-61/64	86.6	29.8	173.2	59.6	439				
430	6	R4306D	16-21/64	22-21/64	10-1/2	8-1/2	15/32	13	2-1/2	2-61/64	86.6	29.8	519.6	178.8	558				
430	10	R43010D	20-21/64	30-21/64	10-1/2	8-1/2	15/32	13	2-1/2	2-61/64	86.6	29.8	866.0	298.0	677				
565	2	R5652D	13-19/32	15-19/32	12	9-3/4	35/64	14-7/8	2-3/4	3-13/64	113.1	38.4	226.2	76.8	619				
565	6	R5656D	17-19/32	23-19/32	12	9-3/4	35/64	14-7/8	2-3/4	3-13/64	113.1	38.4	678.6	230.4	772				
565	10	R56510D	21-19/32	31-19/32	12	9-3/4	35/64	14-7/8	2-3/4	3-13/64	113.1	38.4	1131.0	384.0	926				

Hydraulics

# Cylinders

## double-acting Cylinders - "Rd" Series



**Rd Series 300, 400 & 500 Ton**  
Includes removable lifting strap w/ eye hooks for moving cylinder from one site to the next

**Rd Series 150 & 25 Ton**

- For working pressures up to 10,000 psi. Capacities of 10 to 500 tons, stroke lengths of 6.00" to 20.13".
- Ideally suited to severe applications, high cycle usage, various mountings, production fixturing, cabling.
- "RD" series cylinders are perfect for bridge lifting, building reconstruction, shipyard, utility & mining equipment maintenance, and high cycle production applications. The 55 ton and larger cylinders have adjustable lifting straps.
- Aluminum bronze overlay bearings provide long life, chrome plated piston rods resist corrosion. In full compliance with ASME B30.1 standard.

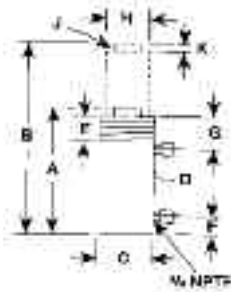
- Load cap snaps out to expose internal piston rod threads for pulling applications; threads withstand full tonnage.
- Grooved ring pattern in load cap guards against load slippage.
- Each cylinder has two 9796 3/8" NPTF female half couplers.
- Built-in safety relief valve prevents accidental over-pressurization of the retract circuit.

**NOTE:** When choosing a pump to operate these cylinders, be sure that its reservoir capacity is sufficient to fully extend the piston of the cylinder being used.

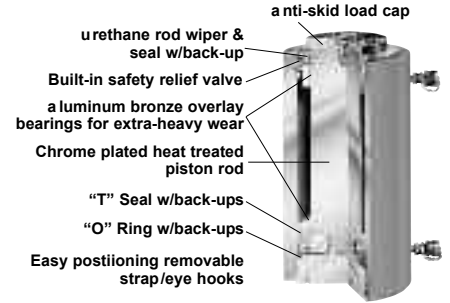
**Optional Swivel Caps:**

- Reduce the effect of off center loads. Tilt a maximum of 5 degrees.
- Radial grooves on top of swivel cap lessen tendency of off-center loads to slip; notch across face of cap keeps loads having a protruding or round shape centered.

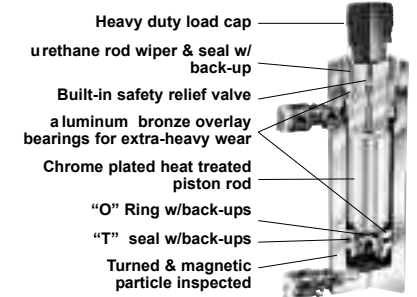
**! Caution:** Lifting loads where the base of the cylinder is not parallel with the surface of the load engaged by the cylinder lifting cap is NOT recommended. If you must lift such a load, be aware that even with the use of a swivel cap, the cylinder can "kick out" from beneath the load and cause serious personal injury and/or property damage.



**features of Rd300, Rd400, Rd500 Series Cylinders:**



**features of Rd10 - Rd200 Series Cylinders:**



Pump	Cylinder	Time to Extend Cyl. 1"	
		100 psi (sec.)	10,000 psi (sec.)
PE55	RD55	1.0	120
	RD100	1.8	22.5
	RD200	3.5	45.0
	RD400	7.2	85.0
PQ120 Series	RD200	3.4	20.6
	RD300	4.9	30.0
	RD400	6.4	39.0
	RD500	8.1	49.5
PE200 Series	RD300	3.0	18.0
	RD400	3.9	23.4
	RD500	4.9	29.7
PE400 Series	RD300	3.0	8.5
	RD400	3.9	11.1
	RD500	4.9	14.1

**Performance**

The table gives you an idea of what to expect when coupling RD series cylinders to a Power Team pump. Actual performance will vary according to job conditions.

**Base mounting Holes**

**NOTE:** Base mounting holes are standard on all RD cylinders. (See chart for specifications).

Orientation of base mounting holes to coupler. Orientation on RD300, RD400 & RD500 series is random.

Cyl. Tonnage	Order No.	A (in)	B (in)	C (in)	Prod. Wt. (lbs)
10	350144	0.88	1.44	0.86	.8
25	350145	1.13	2.13	1.44	1.3
55	351325	2.44	2.50	1.55	4.2
100	351324	2.95	3.75	2.66	11.2
150	351334	2.63	4.38	3.06	12.8

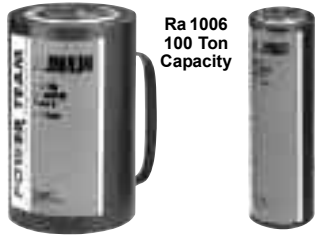
Tonnage No. of Holes	10	25	55	80	100	150	200	300	400	500
Thread Size	3/8-16	1/2-13	5/8-11	5/8-11	3/4-10	1-8	1-1/4-7	1-1/2-12	1-1/2-12	1-3/8-12
Depth	0.63	0.75	0.88	0.88	1.00	1.00	1.25	1.75	1.88	2.00
B. C. Dia.	2.00	2.75	2.30	4.50	5.50	6.00	6.50	6.25	7.25	8.00
Orientation	90°	45°	45°	45°	45°	45°	45°	Random	Random	Random

All dimensions are in inches

Cyl. Cap. (tons)	Stroke (in)	Order No.	Oil Cap. (cu. in)		A	B	C	D	E	F	G	H	J	K	Load Cap. Dia. (in)	Bore Dia. (in)	Cylinder Effective (sq. in.)		Internal Pressure at Cap (psi)		Tons at 10,000 psi (in)		Prod. Wt. (lbs)	
			Push	Pull													Push	Pull	Push	Pull	Push	Pull		
10	4	6.25	RD106	13.9	5.5	11.69	17.94	3.00	2-3/4-12	1.63	1.00	2.50	1.31	1-8x1.00	0.25	1.38	1.69	2.23	0.88	8,943	9,055	11.2	4.4	22.0
10	4	10.00	RD1010	22.3	8.8	15.69	25.69	3.00	2-3/4-12	1.63	1.00	2.50	1.31	1-8x1.00	0.25	1.38	1.69	2.23	0.88	8,943	9,055	11.2	4.4	28.0
25	8	6.25	RD256	32.3	10.1	12.38	18.63	4.00	4-12	1.63	1.00	2.50	2.13	1-1/2-16x1.00	0.38	2.13	2.56	5.15	1.61	9,695	9,934	25.8	8.0	39.8
25	8	14.25	RD2514	73.5	22.9	20.38	34.63	4.00	4-12	1.63	1.00	2.50	2.13	1-1/2-16x1.00	0.38	2.13	2.56	5.15	1.61	9,695	9,934	25.8	8.0	65.0
55	28	6.25	RD556	69.0	35.2	12.97	19.22	5.00	5-12	1.63	1.31	2.50	2.63	1-11/16-8x1.19	0.63	2.63	3.75	11.04	5.63	9,959	9,941	55.2	28.2	61.4
55	28	13.13	RD5513	114.9	73.9	19.84	32.97	5.00	5-12	1.63	1.31	2.50	2.63	1-11/16-8x1.19	0.63	2.63	3.75	11.04	5.63	9,959	9,941	55.2	28.2	90.0
55	28	18.13	RD5518	200.0	102.0	25.88	44.00	5.00	5-12	1.63	1.31	2.50	2.63	1-11/16-8x1.19	0.63	2.63	3.75	11.04	5.63	9,959	9,941	55.2	28.2	142.0
80	44	13.13	RD8013	208.6	115.9	20.38	33.50	5.75	5-3/4-12	1.63	1.50	2.50	3.00	2-4-1/2x1.50	0.56	2.88	4.50	15.90	8.84	10,060	9,954	79.5	44.2	118.0
100	44	6.63	RD1006	136.7	58.3	10.78	20.41	6.88	6-7/8-12	1.63	1.50	2.50	3.88	2-3/4-12x1.16	0.63	3.88	5.13	20.63	8.84	9,695	9,959	103.1	44.2	126.0
100	44	13.13	RD10013	270.7	116.0	23.28	33.41	6.88	6-7/8-12	1.63	1.50	2.50	3.88	2-3/4-12x1.16	0.63	3.88	5.13	20.63	8.84	9,695	9,959	103.1	44.2	181.0
100	44	20.13	RD10020	415.2	178.0	28.28	48.41	6.88	6-7/8-12	1.63	1.50	2.50	3.88	2-3/4-12x1.16	0.63	3.88	5.13	20.63	8.84	9,695	9,959	103.1	44.2	260.0
150	73	6.63	RD1506	203.3	97.9	14.88	21.50	8.25	8-1/4-12	1.63	2.00	2.50	4.50	3-1/4-8x1.50	0.81	4.50	6.25	30.68	14.78	9,779	9,880	153.4	73.8	188.0
150	73	13.13	RD15013	402.7	193.9	21.38	34.50	8.25	8-1/4-12	1.63	2.00	2.50	4.50	3-1/4-8x1.50	0.81	4.50	6.25	30.68	14.78	9,779	9,880	153.4	73.8	272.0
150	73	18.13	RD15018	556.8	267.8	26.53	44.66	8.25	8-1/4-12	1.63	2.00	2.50	4.50	3-1/4-8x1.50	0.75	4.50	6.25	30.68	14.78	9,779	9,880	153.4	73.8	376.0
200	113	6.63	RD2006	273.5	149.8	16.00	22.63	9.50	9-1/2-12	1.63	2.50	2.69	4.88	3-1/4-8x2.25	1.06	4.50	7.25	41.28	22.62	9,689	9,992	206.4	113.1	262.0
200	113	13.13	RD20013	541.8	296.9	22.50	35.63	9.50	9-1/2-12	1.63	2.50	2.69	4.88	3-1/4-8x2.25	1.06	4.50	7.25	41.28	22.62	9,689	9,992	206.4	113.1	356.0
200	113	18.13	RD20018	748.2	409.9	28.50	46.63	9.50	9-1/2-12	1.63	2.50	2.69	4.88	3-1/4-8x2.25	1.06	4.50	7.25	41.28	22.62	9,689	9,992	206.4	113.1	442.0
300	147	6.00	RD3006	361.0	177.0	17.80	23.80	10.75	10-1/2-12	2.38	3.38	3.38	6.25	2-1/2-12x3.25	1.03	6.88	8.75	60.13	29.45	9,978	10,000	300.7	147.3	380.0
300	147	13.00	RD30013	782.0	383.0	24.29	37.29	10.75	10-1/2-12	2.38	3.38	3.38	6.25	2-1/2-12x3.25	1.03	6.88	8.75	60.13	29.45	9,978	10,000	300.7	147.3	654.0
400	186	6.00	RD4006	471.0	247.0	19.27	25.27	12.63	12-1/2-8	2.75	3.84	3.84	7.25	3-12x3.75	1.03	7.81	10.00	78.54	37.26	10,185	10,000	392.7	186.3	585.0
400	186	13.00	RD40013	1021.0	536.0	26.27	39.27	12.63	12-1/2-8	2.75	3.84	3.84	7.25	3-12x3.75	1.03	7.81	10.00	78.54	37.26	10,185	10,000	392.7	186.3	770.0
500	245	6.00	RD5006	596.0	295.0	20.54	26.54	14.75	14-3/4-8	3.13	4.16	4.16	8.00	3-1/4-12x4.25	1.03	8.50	11.25	99.40	49.14	10,060	10,000	497.0	245.6	819.0
500	245	13.00	RD50013	1292.0	639.0	27.54	40.54	14.75	14-3/4-8	3.13	4.16	4.16	8.00	3-1/4-12x4.25	1.03	8.50	11.25	99.40	49.14	10,060	10,000	497.0	245.6	1092.0

# Cylinders

## Single acting - aluminum 20 thru 100 ton cylinders - "Ra" Series



Ra 1006  
100 Ton  
Capacity

Ra 306  
30 Ton  
Capacity

- Aluminum 20 thru 100 ton cylinders 20 to 100 ton capacities with strokes up to 10".
- Aluminum cylinders are almost half the weight of steel.
- All cylinders are in full compliance with ANSI B30.1.

At half the weight of comparable steel cylinders, it makes them easier to position. Ideal for jacking applications in mines, shipyards, steel mills, utility plants and in construction. All feature a hard coated aluminum piston rod and cylinder bore to resist wear and corrosion. Leak resistant and designed for working pressures up to 10,000 psi.

### Swivel caps for Ra series

Reduce effects of off-center loads. The use of these caps, which are designed to tilt a maximum of 5°, will help reduce the effect of off-center loading. Radial grooves machined into the top of the swivel cap lessen the tendency of a load to slip. A notch across the face of each cap helps keep a load having a protruding or round shape centered.

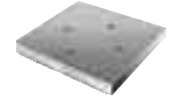
**! Caution:** Lifting loads where the base of the cylinder is not parallel with the surface of the load engaged by the cylinder lifting cap is not recommended. If you must lift such a load, be aware that even with the use of a swivel cap, the cylinder can "kick-out" from beneath the load and cause serious injury and/or property damage.

**No. 420496OR9** Lifting handle for 55 ton cylinder.

**No. 420498OR9** - Lifting handle for 100 ton cylinder.

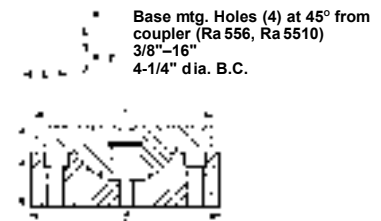
**aluminum Cylinder Base** - For use when an enlarged cylinder base is needed or advantageous. Attaches to bottom of RA556 and RA5510 with four 3/8"-16 screws (included). Serrated base for extra stability.

**No. 208406** - Aluminum cylinder base, 7" square. For use with RA556 and RA5510 cylinders.



Cyl. Cap. (tons)	Stroke (in)	Order No.	A		B		C		D		E		Cyl. Eff. Area (sq. in)	Prod. Wt. (lbs)
			Retracted Height (in)	Extended Height (in)	Bore Dia. (in)	Outside Dia. (in)	Piston Rod Dia. (in)	Protrusion @ Retracted Ht. (in)	Oil Cap. (cu. in)	Int. Pressure @ Cap. (psi)	Tons @ 10,000 PSI	Base to Inlet (in)		
20	2-1/8	RA202	6-3/8	8-1/2	2-3/8	3-3/4	2	5/16	9.41	9030	22.15	1-1/4	4.43	7.7
20	4-1/8	RA204	8-3/8	12-1/2	2-3/8	3-3/4	2	5/16	18.27	9030	22.15	1-1/4	4.43	9.3
20	6-1/8	RA206	10-3/8	16-1/2	2-3/8	3-3/4	2	5/16	27.13	9030	22.15	1-1/4	4.43	11.3
30	2-1/8	RA302	7-3/8	9-1/2	2-7/8	4-1/4	2-1/2	3/8	13.79	9250	32.45	1-1/4	6.49	11.1
30	4-1/8	RA304	9-3/8	13-1/2	2-7/8	4-1/4	2-1/2	3/8	26.77	9250	32.45	1-1/4	6.49	13.1
30	6-1/8	RA306	11-3/8	17-1/2	2-7/8	4-1/4	2-1/2	3/8	39.75	9250	32.45	1-1/4	6.49	15.1
55	2-1/8	RA552	6-3/4	8-7/8	3-3/4	5-1/4	3-1/8	1/4	23.5	9960	55.2	1-3/8	11.04	16.2
55	4-1/8	RA554	8-3/4	12-7/8	3-3/4	5-1/4	3-1/8	1/4	45.5	9960	55.2	1-3/8	11.04	19.6
55	6-1/8	RA556*	10-3/4	16-7/8	3-3/4	5-1/4	3-1/8	1/4	67.6	9960	55.2	1-3/8	11.04	24.0
55	10	RA5510*	15-1/8	25-1/8	3-3/4	5-1/4	3-1/8	1/4	110.4	9960	55.2	1-3/8	11.04	31.8
100	2-1/8	RA1002	7-3/4	9-7/8	5-1/8	7-3/8	4-1/8	1/8	43.8	9696	103.1	1-3/16	20.62	33.4
100	6-1/4	RA1006*	11-3/4	18	5-1/8	7-3/8	4-1/8	1/8	129	9696	103.1	1-3/16	20.62	49.9

\* Cylinders equipped with carrying handle. NOTE: Aluminum cylinders are designed for jacking and other non-production applications.



Base mtg. Holes (4) at 45° from coupler (Ra 556, Ra 5510) 3/8"-16" 4-1/4" dia. B.C.

Cyl. Ton.	Order No.*	A (in)	B (in)	C (in)	Prod. Wt. (lbs)
55	350376	1-1/4	2-13/16	2-13/16	2.0
100	350984	1-15/16	3-3/4	3-1/8	5.6

## Hydraulic Intensifier

- Turns low-pressure portable hydraulic pumps or on-board hydraulic systems into high-pressure power sources. Pressure ratio of 5:1
- Operates either single-acting or double-acting cylinders and tools such as crimpers, spreaders, cutters, etc.
- May be used to operate two separate, single-acting tools (with integral valves) independently.

No need for additional manifold.

- Compact, rugged and portable for use inside a utility vehicle aerial bucket or stowing in a vehicle.
- Various standard Power Team valve options available. Unit comes complete with valve.
- No oil reservoir to tend - unit uses oil from low pressure pump source.

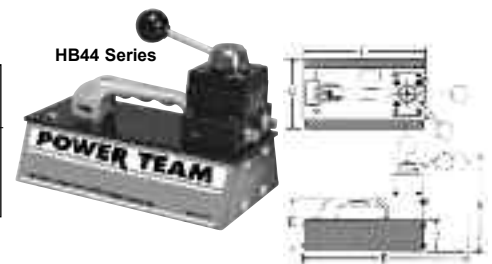
### Applications

By boosting low-pressure oil (2,000 psi) to high pressure (10,000 psi), the Power Team Hydraulic Intensifier powers cylinders, jacks, crimpers, cable cutters, nut splitters, tire tools and similar hydraulic actuated devices

For Use With:	Order No.	Type	Valve No.	Function	Input Flow Range†	Operating Pressure	Max. Output Pressure	Output Flow Range	Output Flow @ 10,000 psi	Prod. Wt. (lbs)
Single-Acting Cylinders	HB443	3-Way/3-position	9520*	Advance Hold Return	0 - 10 gpm	300 - 2,000 psi	10,000 psi	0 - 2.5 gpm	44 in <sup>3</sup> /min.	16
Single-or-Double-Acting Cylinders	HB444	4-way/3-position	6506*	Advance Hold Return	0 - 10 gpm	300 - 2,000 psi	10,000 psi	0 - 2.5 gpm	44 in <sup>3</sup> /min.	16

† For max. efficiency, recommended input flow is 5 gpm at a max. pressure of 2000 psi. Higher flows and/or pressures must be compensated for at the system pump (e.g., relief valve, variable flow devices, etc.).

\* "Posi-Check" valve design, "Posi-Check" guards against pressure loss when the valve is shifted from "Advance" position to "Hold" position.



Order No.	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)
HB44 Series	8-5/8	14-1/2	6-1/8	2-3/4	4-1/2	10-1/2

**Hydraulics**

**Pumps**

**Hydraulic Hand Pumps**

- 10,000 psi capacity.
- Single or two-speed versions available for use with single or double acting cylinders.

**up to 2-1/2 gallon reservoir capacity.**  
All develop up to 10,000 psi (except P23) and can operate horizontally or vertically with the pump in the down position (except 460 series). All pumps have an internal safety relief valve.

**P12 Single-Speed Pump**

For use with single-acting cylinders. Features a finger-tip control valve for instant release or pumping action. Non-vented reservoir, max. handle effort is 80 lbs.

**P19 Two-Speed Pump**

For use with single-acting cylinders. All metal construction, max. handle effort is 90 lbs.

**P23 Single-Speed Pump**

For use with single-acting cylinders. Compact pump similar to P55 with a relief valve setting of 3000 psi non-vented reservoir, max. handle effort is 70 lbs.

**P55 Single-Speed Pump**

For use with single-acting cylinders. Features a finger-tip control valve for instant release or pumping action. All metal construction, carrying handle and large oil fill port. Non-vented reservoir, max. handle effort is 140 lbs.

**P59 Two-Speed Pump**

For use with single-acting cylinders, features a finger-tip control valve for instant release or pumping action. All metal construction, carrying handle and large oil fill port. Non-vented reservoir, max. handle effort is 140 lbs.

**P59f 2-Speed foot Pump**

For use with single-acting cylinders, features foot or hand operated press-to-release valve. Aluminum body and lever, steel reservoir, carrying handle and large oil fill port. Non-vented reservoir, maximum lever effort is 120 lbs.

**P157 & P159 Two-Speed Pumps**

For use with single-acting cylinders. All metal construction, carrying handle and large oil fill

port. Non-vented reservoir, max. handle effort is 130 lbs.

**P157d & P159d Two-Speed Pumps**

For use with double-acting cylinders. Same features as P157 & P159 except P157D & P159D have 4-way tandem center valves.

**P300 Two-Speed Pump**

For use with single-acting cylinders. Same as P159 except it has a large 1-1/2 gal. reservoir with sight gauge.

**P300d Two-Speed Pump**

For use with double-acting cylinders. Same as P159D except it has a large 1-1/2 gal. reservoir with sight gauge.

**P460 Series Two-Speed Pumps**

P460 for use with single-acting cylinders. All metal construction, carrying handle and large 2-1/2 gal. reservoir. Max. handle effort is 90 lbs.

**P460d**, same as P460 except for use with double-acting cylinders. Uses 4-way valve No. 9500.

Pump No.	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	G (in)	H (in)	J (degrees)	K (in)	L (in)	M (in)	N (in)	P (in)
P12	4	-	-	4	13-1/2	3-3/8	2-3/16	-	45°	3/16	3-3/8	-	1-1/8	-
P19	5-1/2	14-5/8	2-7/8	4-9/16	13-11/16	4	3-1/4	11-1/16	53°	5/16	4	3/8 NPTF	1-13/32	-
P23	6-1/4	13	3-1/2	5-9/16	13-5/8	4-1/4	3-1/4	10-5/16	38°	5/16	4-3/4	3/8 NPTF	1-5/8	-
P55	6-1/2	21	3-1/2	5-9/16	23	4-1/4	3-1/4	19-3/4	38°	5/16	4-3/4	3/8 NPTF	1-5/8	-
P59	7	21	3-1/2	5	23	4-1/4	3-1/4	19-3/4	38°	5/16	4-3/4	3/8 NPTF	1-5/8	-
P59F	3-1/2	16-3/4	3-1/2	6	23-1/4	4-1/4	3-1/4	20-1/4	-	5/16	4-1/2	3/8 NPTF	1-11/16	-
P157	7-3/4	20-1/2	4-7/8	6-7/8	22-3/4	3-7/8	3	19-3/4	39°	5-16	3-3/4	3/8 NPTF	2-1/4	-
P159	8-1/4	21	4-1/2	6-7/8	22-5/8	8-1/2	7-1/2 / 3	20-23/32	39°	5/16	3-3/4	3/8 NPTF	2-1/4	-
P300	11-1/8	31	6-3/4	11-3/8	24	29-1/4	11	9	80°	-	-	3/8 NPTF	-	1/4
P460														

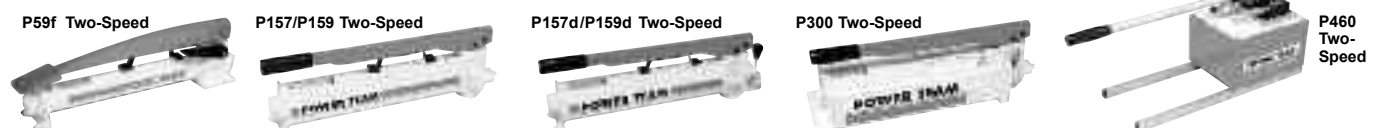
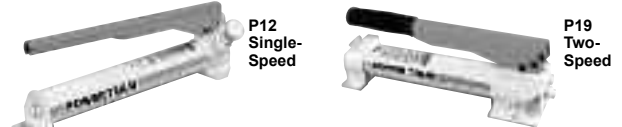
**No. f k 159** foot pump conversion kit for use on P157/P159 and P300/P300D pumps. (shown) 6 lbs.

**No. f k 159B** foot pump conversion kit for use on P157/P159 and P300/P300D model "B" pumps. 6lbs.

**No. f k 59** foot pump conversion kit for use on P55/P59 pumps. (Not shown) 6 lbs.

For Use With:	Order No.	Valve Type	Max. Press Stages	Vol. Per Stroke (cu. in)	Reservoir		Oil Port	Prod. Wt. (lbs)
					Cap	Usable*		
Single-Acting Cyl.	P12	2-way	10,000 PSI	.069	12 cu.in.	9 cu.in.	3/8" NPTF	5.7
	P19		1st: 325 psi	.305	24.4 cu.in.	20 cu.in.		6.6
	P23		2nd: 10,000 psi	.091	23.8 cu.in.	203 cu.in.		12.0
	P55		3,000 psi	.160				15.8
	P59		1st: 325 psi	.662	55	45		17.2
	P59F		2nd: 10,000 psi	.160	cu.in.	cu.in.		14.0
Double-Acting Cyl.	P157D	4-way	1st: 1,400 psi	.65	152 cu.in.	137 cu.in.	26.7	
	P159D	4-way	2nd: 10,000 psi	.160			28.8	
Single-Acting Cyl.	P159	2-way					26.2	
Double-Acting Cyl.	P159D	4-way		2.60			27.9	
Single-Acting Cyl.	P300	2-way	1st: 325 psi	.160	1-1/2 Gal.	310 cu.in.	55.3	
Double-Acting Cyl.	P300D	4-way	2nd: 10,000 psi				57.0	
Single-Acting Cyl.	P460	2-way		7.35	2-1/2 Gal.	460 cu.in.	54.9	
Double-Acting Cyl.	P460D	4-way (9500)		.294			57.9	

\* To ensure consistent performance, always allow at least a 10% margin of safety for usable oil (i.e., if your system calls for 100 cu. in. usable oil, choose a pump with at least 110 cu. in. of usable oil.



## Pumps

### air/Hydraulic Pumps

- New PA9 series single-speed pumps are ideal for powering single acting cylinders and portable hydraulic tools for lifting, crimping/coupling, fastening, positioning and cuffing/bending.
- Easier to operate than a hand pump, giving you the speed you need at an affordable price.
- A time-tested design constructed totally of metal (not plastic!) for years of dependable on the job service. Easy and economical to service; not a "throwaway" unit.
- Unique bladder design offers maximum application versatility, operating either vertically or horizontally.
- Operates on 40-120 psi shop air, at 20 cfm.

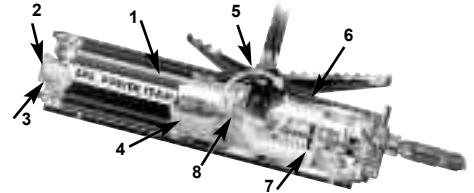
For Use w/ Cyl. Type	Order No.	Air Supply Req'd (psi)	Reservoir (cu. in.)		Oil Port	Max. Pressure Output (psi)	Wt. (lbs)
			Cap.	Usable			
Single-Acting	PA9 PA9H	40-120	35	33.5	3/8" NPTF	10,000	15

Covered by Power Team's exclusive Lifetime Marathon Warranty

#### Pa 9 features

- 1) Heavy-duty, hard-coat anodized aluminum housing, distinctive styling – Extremely rugged and durable, yet light weight.
- 2) Extra large fill port – Easy, no-mess filling of reservoir. Easy access to relief valve for adjustment by service technician.
- 3) Oil filler with integral safety relief.
- 4) Sealed reservoir for all-position operation and storage – Pump operates in any position. No vent on reservoir - so no leaks, no contamination of oil from ambient air. 33.5 cu. in. usable oil.
- 5) Swivel outlet poll – Hydraulic pressure port swivels 360°.

- 6) Release detent – On pedal-equipped pump, detent holds pedal in release position, freeing operator.
- 7) All metal, easily serviceable air motor – Durable, time-tested design (nearly 30 years). Economical to service, NOT a throwaway unit.
- 8) Exclusive rotarystyle release mechanism – Gives operator better control when releasing pressure.



### air/Hydraulic Pumps

- These single-speed air/hydraulic pumps are compact, lightweight and portable.
- Operate on shop air to drive single or double-acting cylinders.
- All pumps come with internal relief valves to protect circuit components.
- Air inlet filter protects motor.
- All metal air motor and ductile iron pump.
- Permanently vented reservoir cap.

These air/hydraulic pumps operate on 40-120 psi shop air and offer greater speed at lower cost. These pumps offer reservoirs from 90 cu. in. usable oil up to the 2-1/2 gallon reservoir for those multiple cylinder applications.

#### Pa 6, Pa 6m, Pa 6m-1, Pa 6-2, Pa 6m-2, Pa 6a and Pa 6a m single-speed pumps

**Pa 6** - For use with single-acting cylinders operating at 10,000 PSI. Highly efficient air/hydraulic power has release detente for cylinder return. High density polyethylene reservoir has 90 cu.

in. of usable oil and pump requires 20 cfm at 100 psi air pressure at the pump.

**Pa 6m** - Same as PA6 except it has a metal reservoir.

**Pa 6m-1** - Same as PA6 except it has a 1 gallon metal reservoir.

**Pa 6-2** - Same as PA6 except it has a 2 gallon high density polyethylene reservoir.

**Pa 6m-2** - Same as PA6 except it has a 2-1/2 gallon metal reservoir.

**Pa 6a** - Same as PA6 with an externally adjustable pressure regulator.

**Pa 6a m** - Same as PA6A except it has a metal reservoir.

#### Pa 6d, Pa 6dm, Pa 6dm-1, Pa 6dm-2, Pa 6d 2 Single-Speed Pumps

**Pa 6d** - For use with single or double-acting cylinders operating at 10,000 psi. Equipped with No. 9504 3-way/4-way valve and high density polyethylene reservoir. Requires 20 cfm at 100 psi air pressure at the pump.

**Pa 6dm** - Same as PA6D except it has a metal reservoir.

**Pa 6dm-1** - Same as PA6D except it has a 1 gallon metal reservoir.

**Pa 6d 2** - Same as PA6D with a 2 gallon high density polyethylene reservoir.

**Pa 6dm-2** - Same as PA6D except it has a 2-1/2 gallon metal, reservoir.

#### metal Reservoir Conversion kits

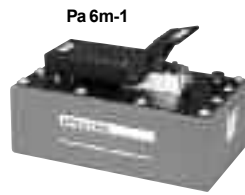
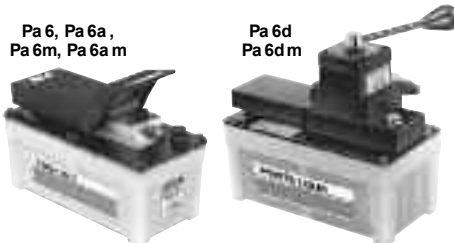
Metal reservoirs are available to convert these pumps from high density polyethylene to metal reservoirs.

**No. 213896** - Metal reservoir, (for PA6, PA6A, PA6D) 105 cu.in. capacity. Includes gasket and fasteners. Wt. 3 lbs.

**No 213895** - Metal reservoir, (for PA6-2 and PA6D2) 2-1/2 gallon capacity. Includes gasket and fasteners. Wt., 9 lbs.

#### 9530 filter/regulator/ lubricator, air

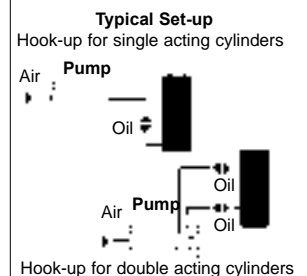
Recommended for use with single-speed air/hydraulic pumps.



For Use With Cyl. Type	Order No.	Valve No.	Air Supply Req'd	Reservoir Cap.	Usable	Oil Port	Prod. Wt. (lbs)
Single-Acting	PA6	-	40-120 psi	105 cu.in.	98 cu.in.	3/8" NPTF	14
Single-Acting	PA6A, PA6AM	-	10-120 psi	105 cu.in.	98 cu.in.	3/8" NPTF	15*
Single-Acting	PA6M	-	40-120 psi	105 cu.in.	98 cu.in.	3/8" NPTF	18
Single-Acting	PA6M-1	-	40-120 psi	1 gal.	185 cu.in.	3/8" NPTF	23.7
Single-Acting	PA6-2	-	40-120 psi	2 gal.	454 cu.in.	3/8" NPTF	24.5
Single-Acting	PA6M-2	-	40-120 psi	2-1/2 gal.	570 cu.in.	3/8" NPTF	32.1
Double-Acting	PA6D, PA6DM	9504 3-way 4-way	40-120 psi	105 cu.in.	98 cu.in.	3/8" NPTF	18.04*
Double-Acting	PA6DM-1	9504 3-way 4-way	40-120 psi	1 gal.	185 cu.in.	3/8" NPTF	28.1
Double-Acting	PA6D2	9504 3-way 4-way	40-120 psi	2 gal.	454 cu.in.	3/8" NPTF	28.6
Double-Acting	PA6DM-2	9504 3-way 4-way	40-120 psi	2-1/2 gal.	570 cu.in.	3/8" NPTF	36.2

\* Add 2 lbs. for metal reservoir.

**Note:** For PA6, PA6A & PA6D, use reservoir mounting screws No. 211060. For PA6-2 & PA6D2, use reservoir mounting screws No. 209799. For PA6M, PA6AM & PA6DM, (metal reservoir) use reservoir mounting screws No. 215952. For PA6M-2 (2-1/2 gal. metal reservoir), use reservoir mounting screws No. 10177 & washers No. 250607.



Pump	A	B	C	D	E	G
PA6/PA6M, PA6A, PA6AM	7-3/4	5-7/8	4-3/8	9-1/2	5	4x9
PA6M-1	7-7/8	6	4-3/8	12-5/8	7-3/8	none
PA6M-2	10	7-3/4	6-3/4	11-1/2	9-1/2	8x10
PA6D, PA6DM	10-3/8	5-7/8	4-3/8	9-1/2	5	4x9
PA6DM-1	11	5-3/4	4-3/8	12-5/8	7-3/8	none
PA6-2	10-1/4	8	7	11-1/2	9-1/2	5-1/8x7-1/8
PA6D2	12-3/4	8	7	11-5/16	9-1/4	5-1/8x7-1/8
PA6DM-2	12-1/2	7-3/4	6-3/4	11-1/2	9-1/2	8x10

**Hydraulics**

# Pumps

## Electric/Hydraulic Pumps - PE17 Series

- Two speed high performance at a low price.
- For use with single-acting and double-acting cylinders.
- All start under load.

### PE17 Series Pumps

The PE17 series pumps are all equipped with a 1/2 hp, 3450 rpm single phase, 110/115 volt thermal protected electric motor. These motors are designed for intermittent duty and will start under full load. All units are equipped with 10 ft. remote control. All models have a 2 gallon thermoplastic alloy reservoir, except PE172M, PE172AM, PE172SM and PE174M which have metal reservoirs.

**PE172** - Use with single-acting cylinders has a No. 9517 2-way/2-pos. valve which holds pressure in the closed position, builds pressure to 10,000 psi in the release position with the motor running and automatically releases pressure

when the motor is shut off.

**PEI 72m** - Same as PE172 except it has a metal reservoir.

**PE172a** - Similar to PE172 except it is an automatic dump for use with single acting cylinders. It's No. 45554 manifold is equipped with a return port which can be used with a remote mounted valve to operate either single- or double-acting cylinders.

**PE172a m** - Same as PE172A except it has a metal reservoir.

**PE172S** - Similar to PE172 except it has a 9579 3-way, 2-position solenoid valve. For use with single-acting cylinders. Has a 10 ft. remote motor and valve control.

**PE172Sm** - Same as PE172S except it has a metal reservoir.

**PE 174** - Equipped with a No. 9500 4-way/3-position valve for use with single-

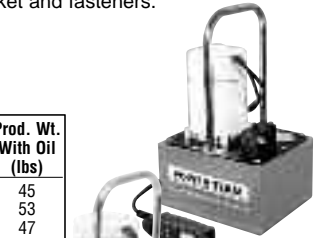
or double-acting cylinders.

**PE174m** - Same as PE174 except it has a metal reservoir.

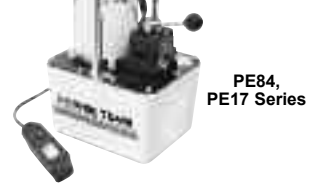
### PE84 Pump

Equipped with a No. 9500 4way/3-pos. valve for operating single- or double-acting cylinders. Has a 1/2 hp, 1725 rpm single phase, 115 volt thermal protected motor with pump mounted on/off switch. Motor will start under full load, is designed for continuous duty, has a 10 ft. remote control and 2-gallon thermoplastic reservoir.

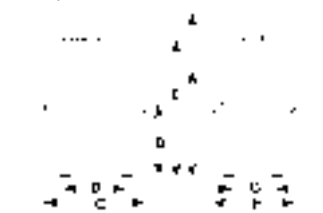
**No. 213895** - Metal reservoir, (for PE84, PE172, PE172A, PE172S & PE174) 2 gallon capacity. Includes gasket and fasteners.



PE172Sm



PE84, PE17 Series



Pump No.	Max. Press Output	rpm	dBA at Idle and 10,000 psi	Amp Draw 115 V @ 10,000 psi	Oil Del. (cu.in./min. @)†				Dimensions (in)							Prod. Wt. With Oil (lbs)
					0 psi	100 psi	5000 psi	10,000 psi	A	B	C	D	E	F	G	
PE17 Series	10,000 psi	3,450	67/81*	10	290	190	20	16	18-1/2	7	11-3/8	7-1/8	14-7/8	9-1/4	5-1/8	45
PE17M Series	10,000 psi	3,450	67/81*	10	290	190	20	16	18-1/8	6-5/8	11-1/2	NA	14-1/2	9-1/2	NA	53
PE84	10,000 psi	1,750	67/81*	10	145	120	12	8	18-1/2	7	11-3/8	7-1/8	15-3/8	9-1/4	5-1/8	47

\* Measured at 3 ft. distance, all sides. † Typical delivery. Actual flow will vary with field conditions.

For Use With	Order No.	Type	Valve No.	Function	Control Switch††	Motor	Cap.	Usable
Single-Acting Cylinder	PE172A^	Auto/Dump	45554	Advance Return	Remote Motor Control (10 ft.) on/off	1/2 hp 110/115 V* 50/60 Hz Single Phase	2 gal. **	295 cu.in.
	PE172AM^	Manifold	45554	Advance Return			2-1/2 gal.**	375 cu.in.
	PE172	2-way	9517	Advance Return (Auto)†	Remote Motor and Valve 10 ft.	1/2 hp 110/115 VAC 50/60 Hz Single Phase	2 gal.**	295 cu.in.
	PE172M	2-way	9517	Advance Return			2-1/2 gal.**	375 cu.in.
	PE172S	3-way	9579	Advance Hold Return			2 gal.**	295 cu.in.
Double or Multi Single-Acting Cylinder	PE84	4-way	9500	Advance Hold Return***	Remote Motor Control (10 ft.) on/off	1/2 hp 115V* 60 Hz Single Phase 1/2 hp 110/115V* 50/60 Hz Single Phase	2 gal.**	295 cu.in.
	PE174	4-way	9500				2 gal.**	295 cu.in.
	PE174M	4-way	9500				2-1/2 gal.**	375 cu.in.

\* Available with 220 V., 50 Hz motor (to order, place suffix "50-220" behind pump order number). Specify voltage when ordering.  
 \*\* Usable oil is calculated with the oil fill at the recommended level of 1-1/2" below reservoir cover plate.  
 \*\*\* Advance position holds pressure with motor shut off.  
 † Advance position; holds pressure with motor shut off. Return position; advances cylinder with motor running and returns cylinder with motor shut off. †† Control switch on PE17 series wired with line voltage. ^ Not to be used for lifting.  
 NOTE: The remote motor control switch on 220V., 50 cycle PE17 series pumps is 24 volt.

## Electric/Hydraulic Pumps - PE46 Series

- Two speed high performance in a lightweight, compact package.
- For use with single- or double-acting cylinders.
- All start under full load.

### PE46 Series Two-Speed Pumps

The PE46 series pumps are all equipped with 1-1/2 hp, 3450 rpm, single phase, 115/230 volt, 60 Hz thermal protected electric motor. These motors will start under full load. All units are equipped with a 10 ft. remote control (except PE462S has 25 ft.) and a 2-1/2 gallon metal reservoir.

**PE462** - For use with single acting cylinders has a No. 9584 3-Way/2-pos. valve to control

"advance" and "return" functions.

**PE462S** - Similar to PE462 except it has a solenoid operated No. 9579 3-way/2-pos. valve that controls "advance" and "return" functions. It is also equipped with a 24 volt, 25 ft. remote motor and valve control. For use with single-acting cylinders.

**PE462a** - Equipped with a No. 9610 3-way/2-pos., pilot-operated "dump" valve. When pump is started, pilot oil automatically closes valve and oil is directed to a single-acting cylinder. When pump is stopped valve automatically opens and oil returns to reservoir.

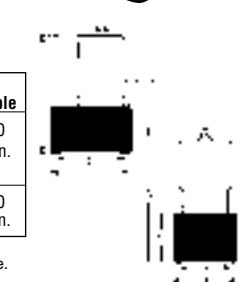
**PE464** - Has a No. 9500 4-way/3-pos. valve which controls the "advance", "hold" and "return" on dou-

ble-acting or multiple single-acting cylinders.

**PE464S** - Has a solenoid operated No. 9592 3/4-way/2-pos. valve which controls the "advance" and "return" functions. For use with single- or double-acting cylinders.



PE464



Pump No.	Max. Press Output	RPM	dBA Draw Idle and 10,000 psi	Amp Draw 115 V @ 10,000 psi	Oil Del. (cu.in./min. @)†				Dimensions (in)							Prod. Wt. With Oil (lbs)
					0 psi	100 psi	5000 psi	10,000 psi	A	B	C	D	E	F	G	
PE46 Series	10,000 psi	3,450	77/81*	25**	500	450	51	46	20	6-13/16	11-1/2	10	14-7/8	9-1/2	8	79

\* Measured at 3 ft. distance, all sides. \*\* Requires 20 amp circuit; † Typical delivery. Actual flow will vary with field conditions.

For Use With	Order No.	Type	No.	Function	Control Switch††	Motor	Reservoir Cap.	Usable
Single-Acting Cyl.	PE462	3-way	9584	Advance Return†	Remote Motor Control (10 ft.) on/off	1-1/2 hp 115/230 VAC* 60 Hz Single Phase	2-1/2 gal. ***	590 cu.in.
	PE462S††	3-way	9579	Advance Return**	Remote Motor/Valve (25 ft.)			
	PE462A^	Auto/Dump 3-way	9610	Advance Return	Remote Motor Control (10 ft.) on/off			
Double- or Multi-Single Acting Cyl.	PE464	4-way	9500	Advance Hold Return†	Remote Motor Control (10 ft.) on/off	1-1/2 hp 115/230 VAC* 60 Hz Single Phase	2-1/2 gal. ***	590 cu.in.
	PE464S††	3/4-way	9592	Advance Return**	Remote Motor/Valve (10 ft.)			

\* Available with 220 V., 50 Hz motor (to order, place suffix "50-220" behind pump order number). Specify voltage when ordering.  
 \*\* Advance position; holds pressure with motor shut off. \*\*\* Usable oil is calculated with the oil fill at the recommended level of 1/2" below reservoir cover plate.  
 † Advance position; holds pressure with motor shut off. Return position returns cylinder. †† 115 volt, 60 Hz.  
 ††† The remote motor control switch on PE46 series pumps is 24 volt. ^ Not to be used for lifting.

## Pumps

### Electric/Hydraulic Pumps - PE18 Series

- Two speed high performance in a lightweight, compact package.
- For use with single- or double-acting cylinders.
- All start under full load.

#### PE18 Series Pumps

All PE18 series pumps are two-speed with a roller vane type pump providing low pressure, high volume and an axial piston pump providing high pressure. All units are equipped with a 1/2 hp, 110/115 volt, 60/50 Hz single phase motors. Pumps will start easily under load, even at reduced voltage. All units have a gauge port on the pump for monitoring system pressure and all have metal reservoirs.

All pumps have a 10 ft. remote control except PE183C which has a 25 ft. remote control.

**PE182** - For use with single-acting cylinders, has 2-way valve for "advance" and "return" (turn motor off for "hold" with the valve in the advance position). 1/2 gallon reservoir.

**PE183** - Same as PE182 except it has a 3-way

valve for "advance", "hold" and "return".

**PE183-2** - Same as PE183 except it has a 2-1/2 gallon reservoir.

**PE183a** - Similar to PE182 except it has an automatic dump valve with "advance" & "return".

**PE184** - For use with double-acting cylinders. Has a 4-way valve for "advance", "hold" and "return". 1/2 gallon reservoir.

**PE184-2** - Same as PE184 except it has a 2-1/2 gallon reservoir.

#### PE183C pump

This special application pump is for crimping or pressing. The PE183C features two-stage flexibility and special electric circuitry to jog/advance, hold at full pressure, build to a predetermined pressure, release, and reset the circuit. It is equipped with a 24 volt control and comes with a 25 ft. remote cord and a dual switch housing containing a pump control switch and a separate emergency return switch.

#### PE184C pump

This pump allows you to alternately operate a spring-return cutting and/or crimping tool with out disconnecting either tool. Its operation is simple: Select the port connection with the manual 4-way valve, start the pump with the remote control hand switch and extend the connected tool. When the hand switch is switched off, the pump stops and the automatic valve opens to allow the tool to return. In the center (neutral) position, the manual control valve holds the selected tool in the position it is in at the time the valve is shifted. The pump comes with a 10 foot heavy duty remote switch.

#### dC conversion kit\*

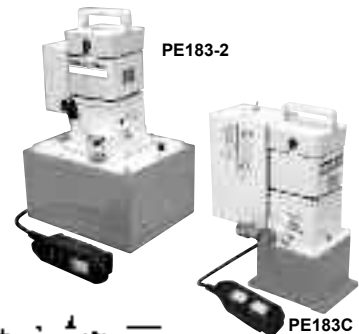
Order kit No. 205601 to convert PE18 series pumps from 115/230 volt AC to 115/230 volt DC. Kit includes a heavy-duty ON/OFF switch for both AC and DC voltage hook-ups.

\* For use only with PE182, PE183, PE184 and PE184-2 when no remote control is used.

Pump No.	Max. Press Output	RPM	dBA Idle at 10,000 psi	Amp Draw 115V at 10,000 psi	Oil Del. (cu.in./min.@†)				Dimensions (in)						Prod. Wt. with Oil (lbs)
					0 psi	100 psi	5,000 psi	10,000 psi	A	B	C	D	F	G	
PE182, PE183, PE183A, PE184	10,000 psi	12,000	85/90**	10.2 Amps	230	190	25	18	16	4-3/4	8	7-1/8	6	5-1/8	30
PE183-2* PE184-2*	10,000 psi	12,000	85/90**	10.2 Amps	230	190	25	18	18-1/2	7-1/4	11-1/2	10	9-1/2	8	42
PE183C††	10,000 psi	12,000	85/90**	10.2 Amps	230	190	25	18	16	4-3/4	8	7-1/8	6	5-1/8	30
PE184C††	10,000 psi	12,000	85/90**	10.2 Amps	230	190	25	18	16	4-3/4	8	7-1/8	6	5-1/8	30

† 2-1/2 gallon reservoir. \*\* Measured at 3 ft. distance, all sides.

†† Typical delivery. Actual flow will vary with field conditions. †† Special application pumps for cutting, crimping or pressing.



For Use With	Order No.	Valve Type	Function	Control Switch	Motor**	Reservoir Cap.	Usable
Single-Acting Cyl.	PE182	2-way	Advance Return†	Remote Motor Control (10ft) on/off	1/2 hp	1/2 gal.	104 cu.in.
	PE183	3-way	Advance Hold Return	Remote Control (10ft)		2-1/2 gal.††	525 cu.in.
	PE183-2	3-way	Advance Hold Return	Remote Control (10ft)	100/115	1/2 gal.	104 cu.in.
	PE183A^	Auto Dump Pump	Advance Return	Remote (10ft)	VAC	1/2 gal.	104 cu.in.
Double-Acting Cyl.	PE184	4-way	Advance Hold Return†	Remote Motor Control (10ft) on/off	50/60 Hz	2-1/2 gal.††	525 cu.in.
	PE184-2	4-way	Advance Hold Return†	Control (10ft) on/off	AC Single Phase	1/2 gal.	104 cu.in.
Special Appl. w/Single Acting Cyl.	PE183C^	Special (for crimping only)	Advance Hold Return	Remote Motor Control (25ft) on/off	AC Single Phase	1/2 gal.	104 cu.in.
Double-Acting Cyl.	PE184*	4-way	Advance Return	Remote Control (10ft) on/off		1/2 gal.	104 cu.in.

\* Also for use with special single-acting cylinder applications. \*\* Available with 220 Volt, 60/50 Hz motor (to order, place suffix "50-220" behind pump order number). Specify voltage when ordering. † Holds when motor is shut off and valve is in advance position. †† Pumps supplied with 2 gal. oil (usable oil is 355 cu. in.), will hold 2-1/2 gal. when filled to within 1/2" below reservoir cover plate. ^ Not to be used for lifting.



With these pumps, the low-pressure high-volume stage provides fast cylinder piston travel. When high force is needed, the high pressure, low-volume stage takes command. The performance curve indicates the oil delivery at various pressure levels.

### Electric/Hydraulic Pumps - vanguard® 30 Series

- Designed for use with single or double-acting cylinders, they deliver a powerful punch! Up to 30 cu. in. of oil at 10,000 psi.

In keeping with the VANGUARD pump tradition, our 30 series pumps feature a high performance to weight ratio, and the ability to start and run at reduced voltage. These all metal pumps offer a wide selection of valve and remote control options, large capacity reservoirs and whisper quiet operation.

The two-speed PE30 features a true unloading valve to achieve high pump efficiency.

Pump will start and run even when voltage is reduced to 50% of nominal rating.

The PE30 motor is a totally enclosed permanent magnet design, and you can choose either a 110/115 volt or 220/230 volt, 50/60 Hz model.

Your choice of a 1-1/4 gallon or 1-3/4 gallon aluminum reservoir.

For faster single-acting cylinder return, the No. 9520 "Posi-check" style manual valve has improved porting.

Amp draw at 10,000 psi is a meager 13 amps @

110/115 volts, and 6.5 amps @ 220/230 volts.

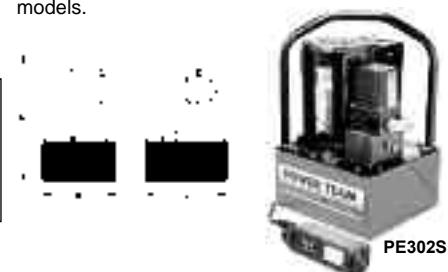
Whisper quiet operation - 82 dBA @ 10,000 psi and 87 dBA @ 0 psi.

24 volt controls are used on all models having remote controls and/or solenoid valves.

To meet your needs, there is a wide range of optional valves available.

An external pressure regulator is optional on all models.

Pump No.	Max. Pressure Output	dBA Idle and 10,000 psi	Amp Draw 115V at 10,000 psi	Oil Del. (cu.in./min.@)					Pump Dim. (in)	Prod. Wt. w/Oil (lbs)
				100 psi	500 psi	1,000 psi	5,000 psi	10,000 psi		
PE30 Series w/1-1/4 gal. res.	10,000 psi	87/82	13	300	200	44	38	30	10"Lx9"Wx16"H	41
PE30 Series w/1-3/4 gal. res.	10,000 psi	87/82	13	300	200	44	38	30	13.5"Lx9.5"Wx16.5"H	49



**Hydraulics**

**Pumps**

**Electric/Hydraulic Pumps - vanguard® 30 Series (continued)**

For Use With	Order No.	Valve			Control Switch	Motor (4000 rpm)††	Reservoir	
		Type	No.	Function			Cap.	Usable
Single-Acting Cyl.	PE302A <sup>^</sup>	Auto Dump	9610	Auto. Pilot Oper.	Remote Motor Control (10ft)	1 hp 110/115 VAC 50/60 Hz Single Phase	1-1/4 gal.**	280 cu.in.
	PE302	3-way, 2 pos.	9584	Adv. Return	On/Off/Jog Switch			
	PE303	3-way, 3 pos.	9520*	Adv. Hold Return	On/Off/Jog Switch			
	PE302R	3-way, 2 pos.	9584	Adv. Return	Remote Motor Control (10ft)			
	PE302S†	3-way, 2 pos.	9579 (115V solenoid)	Adv. Return	Remote Motor & Valve (10ft)			
	PE303R	3-way, 3 pos.	9520*	Adv. Hold Return	Remote Motor Control (10ft)			
	PE302A-2 <sup>^</sup>	Auto Dump	9610	Auto. Pilot Oper.	Remote Motor Control (10ft)		1-3/4 gal.**	380 cu.in.
	PE302-2	3-way, 2 pos.	9584	Adv. Return	On/Off/Jog Switch			
	PE303-2	3-way, 3 pos.	9520*	Adv. Hold Return	On/Off/Jog Switch			
	PE302R-2	3-way, 2 pos.	9584	Adv. Return	Remote Motor Control (10ft)			
PE302-2†	3-way, 2 pos.	9579 (115V solenoid)	Adv. Return	Remote Motor & Valve (10ft)				
PE303R-2	3-way, 3 pos.	9520*	Adv. Hold Return	Remote Motor Control (10ft)				
Double-Acting Cyl.	PE304	4-way, 3 pos.Tandem Ctr.	9506*	Adv. Hold Return	On/Off/Jog Switch	1 hp 110/115 VAC 50/60 Hz Single Phase	1-1/4 gal.**	280 cu.in.
	PE304-2	4-way, 3 pos.Tandem Ctr.	9506*	Adv. Hold Return	Remote Motor Control (10ft)			
	PE-304-2	4-way, 3 pos.Tandem Ctr.	9506*	Adv. Hold Return	On/Off/Jog Switch		1-3/4 gal.**	380 cu.in.
	PE304R-2	4-way, 3 pos.Tandem Ctr.	9506*	Adv. Hold Return	Remote Motor Control (10ft)			



PE30 with 1-3/4 gal. reservoir (L) and PE30R with 1-1/4 gal. reservoir (R). With these pumps, the low-pressure high-volume stage provides fast cylinder piston travel. When high force is needed, the high-pressure, low-volume stage takes command. Portable - all metal hydraulic pump weighs only 41 lbs. with oil. (1-1/4 gal. reservoir)

\* "Posi-Check" valve design, "Posi-Check" guards against pressure loss when valve is shifted from "advance" to "hold" position. \*\* Shipped with 1 gallon of oil (231 cu. in., 210 usable).  
\*\*\* Shipped with 2 gallons of oil. ^ Not to be used for lifting. † 115 volt, 60 Hz. †† For 220/230 volt, 50/60 Hz. add suffix - 220 (example PE302-220).

**Electric/Hydraulic Pumps - PE55 & PEd Series**

• Two-speed, high-performance pumps automatically shift from high oil volume to high oil pressure.

**PE55 Series Pumps**

All units are equipped with a 1-1/8 hp, 12,000 rpm, 110/115 volt, 50/60 Hz A.C. single phase universal motor. Motor draws 25 amps at full load and starts at reduced voltage. All units have an internal relief valve preset at 10,000 psi, a 2-1/2 gallon metal reservoir and an external relief valve which is adjustable from 1,000 to 10,000 psi. All have a 10 ft. remote motor control except PE552S which has a 25 ft. remote motor and valve control.

**PE552** - For use with single-acting cylinders is equipped with a No. 9582 3-way/2-pos. valve for "advance" and "return".

**PE552S** - Same as PE552 except equipped with a No. 9579 3-way/2pos. solenoid operated valve.

**PE552A** - Same as PE552 except equipped with an automatic dump valve.

**PE553** - For use with single-acting cylinders is equipped with a No. 9520 3-way/3-pos. tandem center valve with "Posi-check", for "advance", "hold" and "return". Posi-check guards against pressure loss when shifting valve from "advance" position to "hold" position.

**PE554** - For use with double-acting cylinders is equipped with a No. 9506 4-way/3-pos. tandem center valve with "posi-check". Posi-check guards against pressure loss when shifting valve from "advance" or "return" positions to "hold".

**PE554T** - Same as PE554 except equipped with a No.

9500 4-way/3-position tandem center valve.

**PE554C** - Especially designed for applications requiring repeated cutting and crimping operations involving two different spring return tools. The No. 9511 4-way/3-pos. valve allows alternate and independent operation of single-acting, spring return tools. Holds pressure only while valve is in "A" or "B" port position with pump shut-off.

**PE554S** - For use with double acting cylinders, equipped with 9592 3/4-way, 2 pos. solenoid valve. Holds pressure in the extend position with the motor shut off.

**PEd25 Series dual flow Pumps**

These pumps are dual flow pumps that have the same low pressure and high pressure flow from both valves. Both pumps deliver 300 cu. in./min. of oil at 100 psi and 25 cu. in./min. at 10,000 psi. Flows and pressure of each pump are independent of each other. Both are equipped with a 1-1/2 hp, 110/115 Volt, 60 Hz motor, a 10 ft. remote control and a 5 gallon metal reservoir.

**PED253** - For use with single-acting cylinders, equipped with No. 9520 3-way/3-pos. tandem center valve with "posi-check".

**PED254** - For use with double-acting cylinders, equipped with No. 9506 4-way/3-position tandem center valve with "posi-check".

**PED254S** - Same as PED254 except equipped with a No. 9512 4-way/3 position tandem center solenoid operated valve.

**NOTE:** The PED series pumps do not start under full

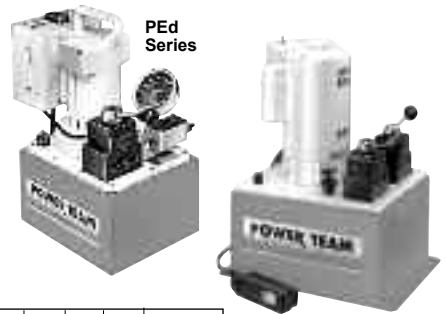
load unless valve is in "neutral" (requires open or tandem center valve) and are not recommended for frequent starting and stopping.

**Accessories**

All pumps can be equipped with remote control foot switch, larger reservoirs, pressure gauges, etc.

**"Assemble to Order" System**

Power Team offers a wide selection of standard pumps that satisfy most applications, but there are times when a custom pump is required. Power Team's "Assemble to Order" system allows you to choose from a wide range of pre-engineered, off-the-shelf components to build a customized pump to fit specific requirements. By selecting standard components you get a "customized" pump without "customized" prices. All pumps come fully assembled, less oil and ready for work.



Pump No.	rpm	Max. Pressure Output	dBA at Idle and 10,000 psi	Amp. Draw @ 10,000 psi (115V)**	Oil Delivery (cu.in./min@)				A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	G (in)	H (in)	Prod. Wt. w/ Oil (lbs.)
					100 psi	1,000 psi	5,000 psi	10,000 psi									
PE55 Series	12,000	10,000 psi	90/95*	25	650	80	70	55	18-1/4	11-1/2	9-1/2	7	10	8	14	-	65
PED Series	3450	10,000 psi	80/85*	22	300	40	35	25	20-3/4	18	11-1/2	8-1/2	16-1/2	9	18	13	170

\* Noise level reading (dBA) measured at a 3 foot distance, all sides. \*\*Amp draw at 10,000 psi, Volts 50/60 Hz is 15 Amps

For Use With	Order No.	Valve			Control Switch††	Motor (4000 rpm)††	Reservoir	
		Type	No.	Function			Cap.	Usable
Single-Acting Cyl.	PE552	3-way	9582	Adv. Return**	Remote Motor	1-1/8 hp* 100/115 VAC, 50/60 Hz Single Phase	2-1/2 gal.	525 cu.in.
	PE552S	3-way	9579	Adv. Return**	Remote Motor & Valve		2-1/2 gal.	525 cu.in.
	PE552A <sup>^</sup>	Auto/Dump	9610	Adv. Return	Remote Motor		2-1/2 gal.	525 cu.in.
	PE553	3-way†	9520	Adv. Hold Return	Remote Motor		2-1/2 gal.	525 cu.in.
	PED253	3-way†	9520	Adv. Hold Return	Remote Motor		5 gal.	1,000 cu.in.
Double-Acting Cyl.	PE554	4-way†	9506	Adv. Hold Return	Remote Motor	1-1/2 hp, 115/230 VAC, 60 Hz, Single Phase	2-1/2 gal.	525 cu.in.
	PE554T	4-way	9500	Adv. Hold Return	Remote Motor		2-1/2 gal.	525 cu.in.
	PE554C	4-way	9511	Adv. Hold Return	Remote Motor		2-1/2 gal.	525 cu.in.
	PE554S	3/4-way	9592	Adv. Hold Return	Remote Motor & Valve		2-1/2 gal.	525 cu.in.
	PED254	4-way†	9506	Adv. Hold Return	Remote Motor		5 gal.	1,000 cu.in.
	PED254S	4-way†	9512	Adv. Hold Return	Remote Valve		5 gal.	1,000 cu.in.

\* Pumps available with 230 volt, 60/50 Hz motors. Specify voltage when ordering. \*\* Holds with motor shut off. \*\*\* To order PE55 series pumps with CSA approval, add '-C' to the order No. † Valves have "posi-check" feature. †† Control switch wired with line voltage. All remotes are 10ft. long except for PE552S which is 25ft. long. ^ Not to be used for lifting.



## Hydraulic Accessories

### manifold Blocks

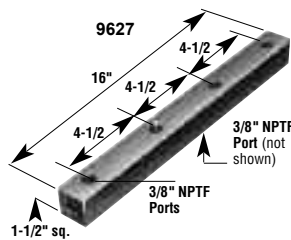
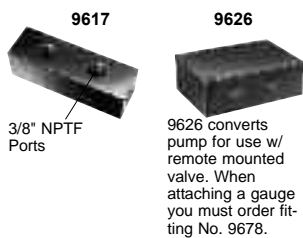
#### 9617 manifold Block

When a multiple- cylinder installation is required, this manifold is invaluable. Has six 3/8" NPTF ports to handle larger multiple-cylinder systems. Wt., 3 lbs.

#### 9626 manifold Block

It converts Power Team pumps with pump mounted valves for use with remote mounted valves. This manifold block is subplate mounted on the pump cover plate and provides 3/8" NPTF pressure and return ports. Maximum operating pressure is 10,000 psi and maximum recommended flow rate is 5 gpm.

**NOTE:** If used on PE30 or PG30 series pump, 1/2" longer mounting screws are required. Order four (4) No. 11956 screws separately.



#### 9627 manifold Block

This 16" long manifold block allows you to mount the 9575 or 9596 valves without interference. Has seven 3/8" NPTF ports and two 1/4" mounting holes. Wt., 6 lbs.

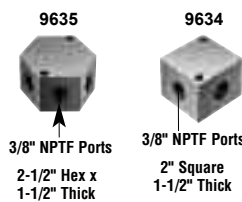
#### 9634 manifold Block

This manifold is for multiple-cylinder installation, has four 3/8" NPTF ports and two 1/4" mounting holes. Wt., 1.5 lbs.

#### 9635 manifold Block

This hex-shaped manifold offers extra versatility. It has six 3/8" NPTF ports and two 1/4" mounting holes. Wt., 2 lbs.

#### 9642 and 9644 manifold Blocks with



### Needle valves

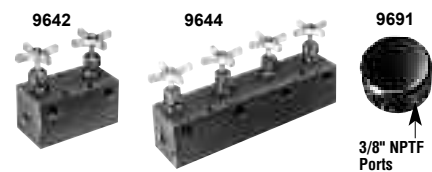
For independent multiple-cylinder operation, feature needle valves for precise manual control. Designed for remote-mounted applications, they can be used with all Power Team gas, air or electrically driven hydraulic pumps.

**No. 9642** - Manifold with two needle valves for control of two cylinders. Has four 3/8" NPTF ports. Wt., 8.2 lbs.

**No. 9644** - Manifold with four needle valves for control of four cylinders. Has six 3/8" NPTF ports. Wt., 16.2 lbs.

#### 9691 "y" manifold

Extremely useful when connecting two hydraulic cylinders to a single line. Has three 3/8" NPTF ports. Wt., 1 lb.



### Hose



**Non-conductive hose** - For applications requiring electrical isolation by the hose, "non-conductive" hose has a leakage factor of less than 50 microamperes, considered a safe level on conductivity by SAE standards. The covering is polyurethane and colored orange for easy identification as non-conductive hose. The covering is not perforated, preventing moisture from entering the hose and affecting its overall conductivity. All non-conductive hoses have a minimum burst pressure of 40,000 psi.

#### Hydraulic hose assembly

**No. 9764** - Hose ass'y consisting of 9767 (6' hose), 1/4" I.D. polyurethane with 9798 hose half coupler & 9800 dust cap assembled.

**No. 9754** - Hose ass'y consisting of 9756 (6' hose), 1/4" I.D. rubber with 9798 hose half coupler & 9800 dust cap assembled.

#### Cylinder return time

The figures below show the relative effect two styles of hose can have on return time. Actual times may vary.

Cyl.	No. 9769 10 ft. Hose 1/4" I.D.	No. 9781 10 ft. Hose 3/8" I.D.
C2514C	51 sec.	14 sec.
C556C	1 min., 30 sec.	24 sec.
C5513C	4 min., 12 sec.	59 sec.
C10010C	6 min., 56 sec.	1 min., 3 sec.

Order No.	Hose Length (ft)	Hose Type	Hose I.D.	Hose Ends
9765	2	Polyurethane Nylon Core Synthetic Fiber Reinforced* (20,000 psi burst rating)	1/4"	
9766	3			
9767	6			
9764**	6			
9768	8			
9769	10			
9770	12			
9771	20			
9772	50			
9750	75			
9751	100			
9780	6	Polyurethane Nylon Core Synthetic Fiber Reinforced* (30,000 psi burst rating)	3/8" High Flow	
9781	10			
9782	20			
9783	50			
9755	3	Rubber, Wire-Braid (2-Ply, 20,000 psi burst rating)	1/4"	3/8" NPTF Male
9756	6			
9754**	6			
9757	8			
9758	10			
9759	12			
9760	20			
9761	30			
9762	50			
9733	3	Rubber, Wire-braid (40,000 psi burst rating)	3/8" High Flow	
9776	6			
9777	10			
9734	15			
9778	20			
9735	30			
9736	40			
9779	50			
9773	6	"Non-Conductive" (40,000 psi burst rating)	1/4"	
9774	10			
9775	20			

\*NOTE: This hose not recommended for use where heat or weld splatter conditions exist.

\*\* Furnished with 9798 hose half coupler & 9800 dust cap.

**Hydraulics**

**Hydraulic Accessories**

**Heavy-duty Hydraulic Pressure gauges**

A complete new line of accurate and reliable heavy-duty pressure gauges. These gauges feature an easily readable and highly visible adjustable, red day-glo needle. A high strength steel bourdon tube ensures high cycle life. With stainless steel cases and lens locking rings, all 4" and 6" dry gauges can be filled with silicone

(Kit #9046). All gauges have 1/4" NPT bottom connections. Designed to meet ANSI B40.1 grade B standards.

**NOTE:** Gauges 9040-9085 are available in Europe with readings in bar. To order add the letter 'E' to the part number (example 9075E) or contact us for more details.

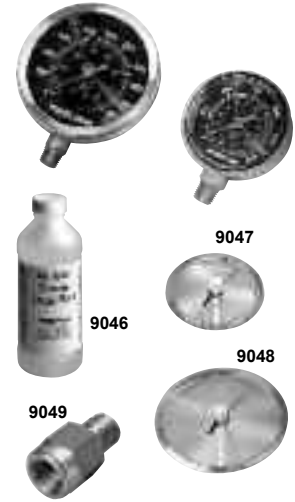
**gauge accessories**

- No. 9047** - Replacement lens and pointer for 2-1/2" dia. gauge.
- No. 9048** - Replacement lens and pointer for 4" dia. gauge.
- No. 9049** - High performance pulsation dampener. 1/4 NPTF male X 1/4 NPTF female.
- No. 9046** - Silicone fill kit. 7.5 fl. oz. Requires one bottle to fill 4" gauge; four bottles to fill 6" gauge.

Gauge No.	Face Dia. (in)	psi	Bar	Tons	Major Graduations	Minor Graduations	Silicone Filled	Tonnage	Use With PT Cyl. Series
9041	2-1/2	0 - 10,000	0 - 690	-	2500 psi, 100 Bar	500 psi, 20 Bar	No	-	All
9040	2-1/2	0 - 10,000	0 - 690	-	2500 psi, 100 Bar	500 psi, 20 Bar	Yes	-	All
9051	4	0 - 10,000	0 - 690	-	1000 psi, 100 Bar	200 psi, 10 Bar	No*	-	All
9052	4	0 - 10,000	0 - 690	-	1000 psi, 100 Bar	200 psi, 10 Bar	Yes	-	All
9059	4	0 - 10,000	-	17.5, 30, 50	2000 psi, 5 Ton	200 psi, .5 Ton on 30, 50 Ton Scales; .2 Ton on 17.5 Ton Scale	No*	17.5, 30, 50	RT172, RT302, RT503
9053	4	0 - 10,000	-	0 - 5	2000 psi, 1 Ton	200 psi, .1 Ton	No	5	C & RLS
9055	4	0 - 10,000	-	0 - 10	2000 psi, 1 Ton	200 psi, .1 Ton	No*	10	C, RD, RH, RLS & RSS
9057	4	0 - 10,000	-	0 - 15	2000 psi, 1 Ton	200 psi, .2 Ton	No*	15	C
9061	4	0 - 10,000	-	0 - 20	2000 psi, 5 Ton	200 psi, 2 Ton	No*	20	RH†, RLS, RSS
9063	4	0 - 10,000	-	0 - 25	2000 psi, 5 Ton	200 psi, 5 Ton	No*	25	C & RD
9065	4	0 - 10,000	-	0 - 30	2000 psi, 5 Ton	200 psi, .5 Ton	No*	30	RH†, RLS & RSS
9067	4	0 - 10,000	-	0 - 50	2000 psi, 5 Ton	200 psi, 5 Ton	No*	50	RH†, RLS & RSS
9069	4	0 - 10,000	-	0 - 55	2000 psi, 5 Ton	200 psi, 5 Ton	No*	55	C, R, RA & RD
9071	4	0 - 10,000	-	0 - 60	2000 psi, 5 Ton	200 psi, 1 Ton	No*	60	RH
9073	4	0 - 10,000	-	0 - 80	2000 psi, 5 Ton	200 psi, 1 Ton	No*	75	C, RLS & RD8013
9075	4	0 - 10,000	-	0 - 100	2000 psi, 10 Ton	200 psi, 1 Ton	No*	100	C, R, RA, RD, RH, RLS†, RSS† & RT1004†
9077	4	0 - 10,000	-	0 - 150	2000 psi, Initial 10 Then 20 Ton	200 psi, 2 Ton	No*	150	C, R, RD & RLS
9079	4	0 - 10,000	-	0 - 200	2000 psi, 20 Ton	200 psi, 2 Ton	No*	200	R, RD & RH†
9081	4	0 - 10,000	-	0 - 300	2000 psi, 25 Ton	200 psi, 5 Ton	No*	300	RD
9083	4	0 - 10,000	-	0 - 400	2000 psi, 50 Ton	200 psi, 5 Ton	No*	400	RD
9085	4	0 - 10,000	-	0 - 500	2000 psi, 50 Ton	200 psi, 5 Ton	No*	500	RD
9087	4	0 - 6,000	0 - 400	-	1000 psi, 100 Bar	200 psi, 10 Bar	No*	-	All
9089	6	0 - 10,000	0 - 690	-	1000 psi, 100 Bar	100 psi, 10 Bar	No*	-	All
9091	4	0 - 10,000	-	0 - 150	2000 psi, Initial 10 Then 20 Ton	200 psi, 2 Ton	Yes	150	RH

\* Shipped "dry." User can convert to "wet" using liquid silicone No. 9046.

† The tonnage scale on the gauge is based on a different effective area. A slight error in tonnage reading will occur relative to the different effective area.



14  
Hydraulics

**Cylinder & Hose Couplers**

Designed for use up to 10,000 psi with hydraulic jacks, cylinders, etc. They are the threaded union type for interchanging cylinders in seconds. Each half is valved with a precision ball for a tight shutoff when disconnected. These couplers also permit the separation of cylinders or hose from pump when at 0 psi with minimal oil loss.

**No. 9795** - Complete quick coupler, 3/8" NPTF. (includes two 9800 dust caps.)

**No. 9798** - Male (hose) half coupler (less hose half dust cap), 3/8" NPTF.

**No. 9796** - Female (cylinder) half coupler with dust cap, 3/8" NPTF.

**No. 9799** - Optional metal dust cap (Hose half.)

**No. 9797** - Optional metal dust cap (Cylinder half.)

**No-Spill, Push-to-Connect Hydraulic Hose Couplers**

High flow, no-spill, push-to-connect couplers with locking collar and flush face designed for high pressure applications. The flush-face concept makes it easy to clean both coupler ends before connecting. Our unique push-to-connect, "dry-break" design eliminates oil spillage. The locking collar makes accidental disconnects a

thing of the past. For 10,000 psi operation. Designed to permit high oil flow.

**No. 9792** - Female (cylinder) half quick coupler only. Wt., .3 lb.

**No. 9793** - Male (hose) half quick coupler only. Wt., .3 lb.

**No. 9790** - Metal dust cap for 9792 female half coupler. Wt., .1 lb.

**No. 9791** - Metal dust cap for 9793 male half coupler. Wt., .1 lb.

**No. 9794** - Complete quick coupler (male and female). Dust caps not included. Wt., .5 lb.

**Hydraulic Coupler dust Cap**

Dust cap fits either male or female half couplers.

**No. 9800** - Dust cap. For male or female 3/8" NPTF half couplers. Wt., .3 lb.

**universal Pump Cart**

Mobilize your hydraulic pumps with the PC200. The rugged tubular frame can easily handle pumps weighing up to 200 lbs. With 12 in. wheels, the cart rolls easily. Just load the pump onto the cart and wheel it right to the job. It saves time and hard work. The universal mounting hole Pattern lets you handle a wide variety of Power Team pumps.

**No. PC200** - Universal pump cart with 12 in. wheels. Cart can be used with the following pumps: PA60, PA64 and PA554 air/hydraulic pumps; PE55 series, PE183-2 and PE 184-2 electric/hydraulic pumps; PE21, PQ60 and PQ120 series "Quiet" pumps; PG55 series gas engine/hydraulic pumps; and pumps with optional 5- and 10-gallon reservoirs Nos. RP50, RP51, RP101 and RP103. Wt., 27 lbs.

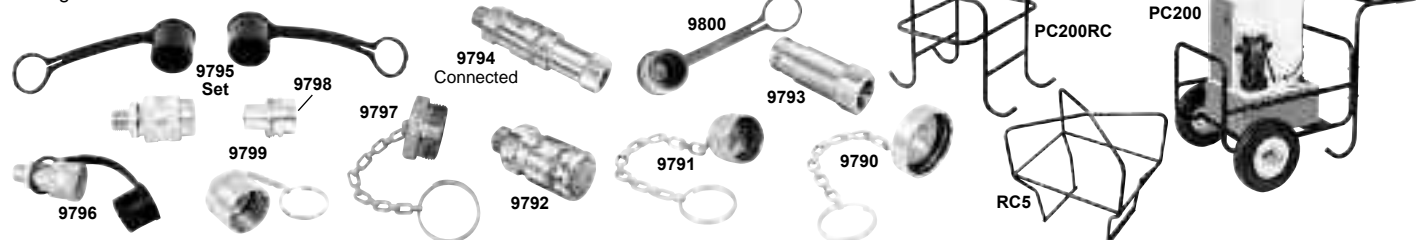
**No. PC200RC** - Roll cage for use with PC200. (Cannot be used on pumps with 10 gallon reservoirs.) Wt., 36 lbs.

**Protective Pump Roll Cage**

This unit safeguards the pump, gas engine and valves on the job site. Horizontal bars provide convenient hand holds for carrying the pump, and a pick-up point permits lifting the unit with an overhead crane or other device. Furnished as standard equipment on PG1203 and PG1204 Power Package units. Can be ordered as an option with any other gas, air or electrically driven hydraulic pump equipped with a 5-gallon reservoir.

**NOTE:** Refer to PG 1 203/PG 1204 specification chart for dimensions of roll cage.

**No. RC5** - Roll cage. Wt., 19.5 lbs.



## Hydraulic Accessories

### Hydraulic fittings - 10,000 psi

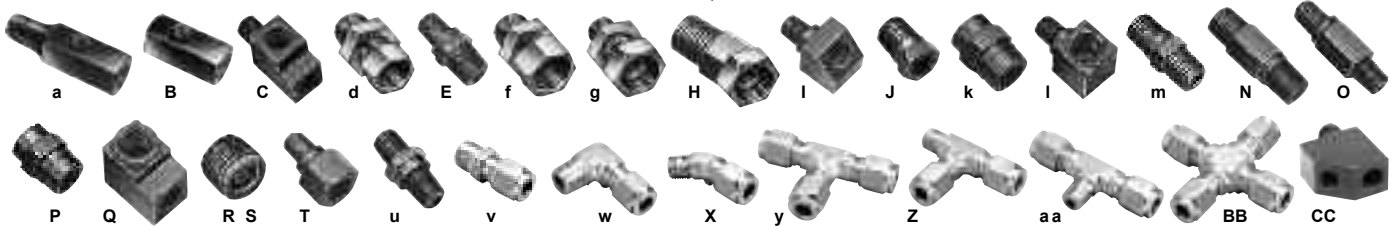
Power Team's fittings include a wide range of types and sizes. Ideal for many hydraulic applications.

- a) **No. 9670** - Tee adapter. For installing gauge between pump and hose coupling. Has 1/4" and 3/8" NPTF female and 3/8" NPTF male ports. Wt., .5 lb.
- B) **No. 9671** - Double tee adapter. Permits use of more than one cylinder in series with one pump. Three 3/8" NPTF female ports. Wt., 1 lb.
- C) **No. 9672** - Service tee. Two 3/8" NPTF female internal, one 3/8" NPTF male external. Wt., .6 lb.
- d) **No. 9673\*** - Swivel connector, 3/8" NPTF male, 1/4" NPSM female. Wt., .2 lb.
- E) **No. 9674** - Male reducer adapter, 1-11/16" long, 1/4" x 3/8" NPTF. Wt., .2 lb.
- f) **No. 9675\*** - Swivel connector, 3/8" NPTF male, 3/8" NPSM female. Wt., .2 lb.
- g) **No. 9676\*** - Swivel connector, 1/4" NPTF male, 3/8" NPSM, female. Wt., .2 lb.
- H) **No. 9677\*** - 45° swivel connector, 3/8" NPTF male, 3/8" NPSM, female. Wt., .3 lb.
- I) **No. 9678** - 45° fitting. Used when mounting

- gauge at an angle on connection such as 9670. Male and female 1/4" NPTF ends. Wt., .3 lb.
- J) **No. 9679** - Reducing bushing, 1/4" NPTF female and 3/8" NPTF male. Wt., .1 lb.
- k) **No. 9680** - Coupling. Both ends 3/8" NPTF female. Wt., .2 lb.
- l) **No. 9681** - Street elbow. Male and female 3/8" NPTF ends. Wt., .3 lb.
- m) **No. 9682** - Short nipple. 1-1/16" long, 3/8" NPTF male ends. Wt., .1 lb.
- N) **No. 9683** - Long nipple. 2-1/4" long, 3/8" NPTF male ends. Wt., .2 lb.
- O) **No. 9684** - Long nipple. 2-1/4" long, 1/4" NPTF male ends. Wt., .2 lb.
- P) **No. 9685** - Reducing fitting, 1/4" NPTF female and 3/8" NPTF female. Wt., .2 lb.
- Q) **No. 9686** - 90° elbow. 3/8" NPTF female ends. Wt., .4 lb.
- R) **No. 9687** - Pipe plug. Heat treated, 3/8" NPTF. Wt., .1 lb.
- S) **No. 9688** - Pipe plug. Heat treated, 1/4" NPTF. Wt., .1 lb.
- T) **No. 9689** - Connector, 1/4" NPTF male and - 3/8" NPTF female. Wt., .2 lb.

- u) **No. 9690** - Short nipple. 1-11/16" long, 1/4" NPTF male ends. Wt., .1 lb.
- v) **No. 9692** - Straight connector, 3/8" tube x 3/8" male NPTF. Wt. .2 lb.
- w) **No. 9693** - 90° elbow, 3/8" tube x 3/8" male NPTF. Wt., .2 lb.
- X) **No. 9694** - 45° elbow, 3/8" tube x 1/4" male NPTF. Wt., .2 lb.
- y) **No. 9695** - Tee, 3/8" tube. Wt., .3 lb.
- Z) **No. 9696** - Male run tee, tube 3/8" male tube x 1/4" male NPTF. Wt., .3 lb.
- aa) **No. 9697** - Male branch tee, 3/8" tube x 1/4" male NPTF. Wt., .3 lb.
- BB) **No. 9698** - Cross, 3/8" tube. Wt., .4 lb.
- CC) **No. 9699** - 45° gauge fitting 3/8" NPTF male and female, and 1/4" NPTF female at 45°. Wt., .6 lb.
- dd) **No. 9190** - Hyd. tubing. 3/8" O.D. x .065" wall 50 ft. (10 pieces 5 feet long.) Wt., 12 lbs.

**NOTE:** Power Team hydraulic fittings are intended for use with our high pressure hydraulic products and are suitable for use at max. working pressures of 10,000 psi unless otherwise noted.



## Valves

### valves for Single-acting Cylinders

#### 9502 3-way, 3-Position (Closed Center), Non-interflow manual valve with "Posi-Check"

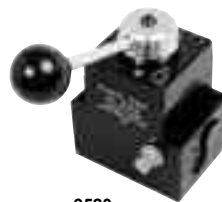
This is a detent 3-way, 3-position closed center valve. It can be either pump mounted or remote mounted with the 9510 subplate. The 9502 is of low torque design for use with single-acting cylinders. A pressure switch and/or gauge may be attached. Port size is 3/8" NPTF. Maximum operating pressure 10,000 psi and the maximum recommended flow rate is 5 gpm.

**NOTE:** The 9502 is suitable for use with the following pumps: P460, PA17, PA46, PA55, PA60, PE17, PE21, PE30, PE46, PE55, PE84, PE90, PE120, PE200, PE400, PQ60 and PQ120 series pumps.

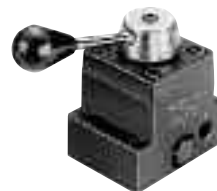
**No. 9502:** - 3-way, 3-position closed center manual control valve, pump mounted. Wt., 4.2 lbs.

#### 9520 3-Way, 3-Position (Tandem Center) Manual Valve with "Posi-Check"

This 3-way, 3-position (tandem center) manual valve, to be used with single acting cylinders. When shifted to the retract position the pump and cylinder return through their own separate return lines, allowing faster return time on single-acting cylinders. The "posi-check" feature guards against pressure loss when shifting from the "advance" to "hold" position. A pressure switch and/or gauge may be attached. Port size is 3/8" NPTF. Max. operating pressure 10,000 psi; max. flow rate is 5 gpm.



9520



9502



9576

**NOTE:** The 9520 is suitable for use with the P460, PA17, PA46, PA55, PE17, PE21, PE30, PE46, PE55, PE84, PE90, PE120, PQ60, PQ120, PE200, PE400, PG30, PG55, PG120 and PG400 series pumps.

**No. 9520** - 3-way, 3-position (Tandem Center) Manual Valve. Wt., 5.1 lbs.

#### 9576 3-way, 3-Position (tandem center) metering valve

The 9576 is a pump mounted, 3-way, 3-position valve designed for use with single-acting cylinders. The valve offers metered "advance," "hold" and metered "return" positions. It can be remote mounted using the 9510 subplate. If required, a pressure switch and/or gauge may be attached. Port size is 3/8" NPTF. Maximum operating pressure is 10,000 psi and maximum flow rate is 5 gpm.

**NOTE:** The 9576 is suitable for use with the PA17, PA46, PA55, PE17, PE21, PE30, PE46, PE55, PE84, PE90, PE120, PQ60, PQ120, PE200, PE400, PG30, PG55, PG120 and PG400 series pumps.

**No. 9576** - 3-way, 3-position metering control valve (tandem center), pump mounted. Wt., 8.5 lbs.

**NOTE:** When ordering any valve for a PE30 or PG30 series pump, 1/2" longer mounting screws are required. For valve Nos. 9502 and 9520 order four No. 12001 cap screws. For valve No. 9576 order four No. 17428 cap screws.

**NOTE:** Valve Nos. 9501, 9502, 9504 and 9507 can have a port blocked or have a closed center position. When a port is blocked and the valve is shifted to the blocked port, the pump will generate excessive heat. An electric or rotary air pump can either be turned off manually or with a pressure switch. Reciprocating air pumps may be adjusted to stall out and stop.

Hydraulics

# Valves

## valves for Single-acting Cylinders

### 9582, 9584 3-way, 2-Position manual valves

The 9582 is a pump mounted, 3-way manual valve for use with single-acting cylinders. It is lever operated with "advance" and "return" positions. If required, a pressure switch and/or gauge may be attached. Port size is 3/8" NPTF. Maximum operating pressure is 10,000 psi; max. flow rate is 5 gpm.

**NOTE:** The 9582 and 9584 are suitable for use with the P460, PE17, PE21, PE30, PE46, PE55, PE84, PE90, PE120, PQ-60 and PQ120 series pumps.

**No. 9582** - 3-way, 2-pos. pump mounted manual valve. Wt., 2.5 lbs.

**No. 9584** - Same as 9582 except has "flipper" control. Wt., 1.8 lbs.

### 9610 3-way, 2-Position Pilot Operated automatic valve

This is an automatic, pilot operated, 3-way valve for use with single-acting cylinders. When the pump is started, pilot oil automatically closes the valve and oil is directed to a single-acting cylinder. When the pump is stopped, the valve automatically opens and oil returns to the reservoir. A pressure switch and/or gauge may be attached. Port size is 3/8" NPTF. Maximum operating pressure is 10,000 psi; max. flow rate is 5 gpm.

**NOTE:** The 9610 is furnished with pilot lines

and adapters for the PA55, PA90, PE30, PE55, PE90 and PE120 series pumps. Call for more information on these & other pump models.

**No. 9610** - 3-way, 2-position pilot operated automatic valve, pump mounted. Wt., 4.2 lbs.

### 9610a 2/3-way, 2-Position manual/Pilot Operated automatic valve

This valve gives you both manual operation for load lifting and holding, and automatic dump for operating hydraulic tools. When the release knob is in the closed position the valve will hold the load. When the release knob is open, the valve functions like a true automatic dump valve. A pressure switch and/or gauge may be attached. Port size is 3/8" NPTF. Maximum operating pressure is 10,000 psi; max. flow rate 5 gpm.

**NOTE:** The 9610A is furnished with pilot lines and adapters for the PA55, PA90, PE30, PE55, PE90 and PE120 series pumps. Call for more information on these & other pump models.

**No. 9610a** - 2/3-way, 2 position manual/pilot operated automatic valve, pump mounted. Wt., 4.4 lbs.

### 9517 2-way, 2-Position manual valve

The 9517 is a 2-way manual valve for use with single-acting cylinders. It is flipper lever operated with advance and retract positions. A pressure switch and/or gauge may be attached. Port size 3/8" NPTF. Maximum operating pressure

10,000 psi; max. flow rate 5 gpm.

**NOTE:** May be used with PE172, PE84 and PA172 series pumps.

**No. 9517** - 2-way, 2-position manual valve, "flipper" control. Wt., 3.2 lbs.

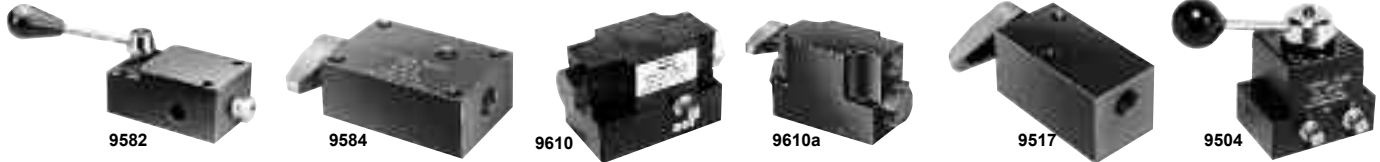
### 9504 3/4-way, 2-Position manual valve for Single- or double-acting Cylinders.

This low torque design valve can be used with single- or double-acting cylinders. It is a pump mounted, detented 3-way or 4-way, 2-position manual valve. When using as a 3-way valve for single-acting cylinders, plug port "A" or "B." The 9504 can be remote mounted with the 9510 subplate. A pressure switch and/or gauge may be attached. Port size is 3/8" NPTF. Maximum operating pressure is 10,000 psi; max. flow rate is 5 gpm.

**NOTE:** The 9504 is suitable for use with the P460, PA6-D, PA17, PA46, PA55, PA60, PE17, PE21, PE30, PE46, PE55, PE84, PE90, PE120, PE200, PE400, PQ60 and PQ120 series pumps.

**No. 9504** - 3/4-way, 2-position manual valve, pump mounted. Wt., 4.2 lbs.

**NOTE:** When ordering any valve for a PE30 or PG30 series pump, 1/2" longer mounting screws are required. For valve Nos. 9504, 9584, 9610 and 9610A order four No. 12001 cap screws. For valve No. 9582 order two No. 12001 and two no. 10856 cap screws.



## valves for double-acting Cylinders, manually Operated

### 9506 4-way, 3-Position (Tandem Center) with "Posi-Check"

This pump-mounted, manually operated valve is designed for use with double-acting cylinders. It is a detented 4-way, 3-position tandem center valve with "advance," "hold" and "return" positions. A subplate is provided for pump mounting or it can be remote mounted with the 9510 subplate. A pressure switch and/or gauge may be added. Port size is 3/8" NPTF. Maximum operating pressure is 10,000 psi and max. flow rate is 5 gpm.

**NOTE:** The 9506 is suitable for use with the P460, PA6D, PA17, PA46, PA55, PE17, PE21, PE30, PE46, PE55, PE84, PE90, PE120, PE200, PE400, PED, PG30, PG55, PG120, PG400, PQ60 and PQ120 series pumps.

**No. 9506** - 4-way, 3-position pump-mounted, tandem center valve, manually operated. Contact us for pressure switch application. Wt., 5.1 lbs.

### 9500 4-way, 3-Position (Tandem Center)

### 9511 4-way, 3-Position (Open Center)

These detented 4-way, 3-position valves are designed for use with single- or double-acting cylinders. Valves can be pump mounted, or can be remote mounted with the 9510 subplate. A pressure switch and/or gauge may be added. Port size is 3/8" NPTF. Maximum operating pressure is 10,000 psi; maximum flow rate is 5 gpm.

**NOTE:** These valves are suitable for use with the following pumps: P460, PA17, PA46, PA55,



PE17, PE21, PE30, PE46, PE55, PE84, PE90, PE120, PE200, PE400, PG30, PG55, PG120, PG400, PQ60 and PQ120 series pumps.

**No. 9500** - 4-way, 3-position (tandem center) pump-mounted control valve, manually operated. Wt., 4.2 lbs.

**No. 9511** - Same as 9500 except it has an open center.

### 9507 4-way, 3-position (closed center) valve with "posi-check"

The 9507 is similar to the 9506 except it is a closed center valve with the "posi-check" feature. "Posi-check" guards against pressure loss when shifting from the "advance" to "hold" position. It can be remote mounted with the 9510 subplate. Port size is 3/8" NPTF. Maximum operating pressure is 10,000 psi and maximum flow rate is 5 gpm. For use with single- or double-acting cylinders.

**NOTE:** The 9507 is suitable for use with the P460, PA17, PA46, PA55, PA60, PE17, PE21, PE30, PE46, PE55, PE84, PE90, PE120, PE200, PE400, PQ60 and PQ120 series pumps.

**No. 9507** - 4-way, 3-position (closed center) valve with "posi-check." Wt., 5.0 lbs.

### 9501 4-way, 3-Position (Closed Center)

This is a detented 4-way, 3-position (closed center) pump-mounted, manually operated valve. It can be remote mounted with the 9510 subplate. It is designed for use with single- or double-acting cylinders. A pressure switch and/or gauge may be attached. Port size is 3/8" NPTF. Maximum operating pressure is 10,000 psi and maximum flow rate is 5 gpm.

**NOTE:** The 9501 is suitable for use with the P460, PA17, PA46, PA55, PA60, PE17, PE21, PE30, PE46, PE55, PE84, PE90, PE120, PE200, PE400, PQ60 and PQ120 series pumps.

**No. 9501** - 4-way, 3-position (closed center) valve. Wt., 4.2 lbs.

**NOTE:** When ordering any valve for a PE30 or PG30 series pump, 1/2" longer mounting screws are required. For valve Nos. 9500, 9501 and 9511 order four No. 12001 cap screws. For valve Nos. 9506 and 9507 order four No. 11956 cap screws.

## Valves

### valves for double- or Single-acting Cylinders, Solenoid Operated

#### 9513 4-way, 3-Position (Tandem Center) Pilot Operated Solenoid valve, 115 volt, 50 and 60 Hz

This 4-way, 3-position (tandem center) solenoid valve features "posi-check" which holds the load when shifting from the "advance" to "hold" position. This pump-mounted valve is designed for use with double-acting cylinders. A gauge may be attached if needed. Port size is 3/8" NPTF. Maximum operating pressure is 10,000 psi and maximum flow rate is 5 gpm.

**NOTE:** The 9513 is suitable for use with the PE17, PE21, PE30\*, PE46, PE55, PE84, PE90 PE120, PE200, PE400, PQ60 and PQ120 series pumps.

**No. 9513** - 4-way, 3-position (tandem center) solenoid valve, 115 volt, 50/60 Hz.

**No. 9512** - Same as 9513 except for 24 volt, 50/60 Hz systems.

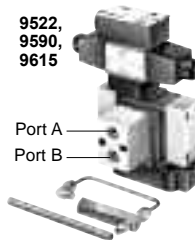
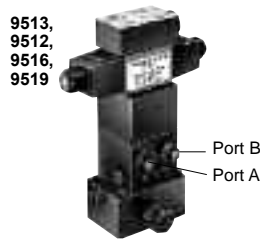
**No. 9516** - Same as 9513 except for 12 volt, DC, and is suitable for use on the PG1204S & PG400 series pumps only.

**No. 9519** - Same as 9513 except for 230 volt, 50/60 Hz. Call for information on field installation.

**NOTE:** Valves are shipped without control switches. Use No. 202778 hand switch.

#### 9590 4-Way, 3-Position (Open Center) Solenoid Valve for 115 Volt, 50 and 60 Hz

This open center solenoid valve has "advance," open center, and "return" positions. (Cylinder ports and pump port open to reservoir in "neutral.") It is designed for use with double-acting cylinders. A pressure switch and/or gauge may



be attached. Port size is 3/8" NPTF. Maximum operating pressure is 10,000 psi; maximum flow rate is 5 gpm.

**No. 9590** - 4-way, 3-position (open center), 115 volt 50/60 Hz solenoid valve, pump mounted. Wt., 15.5 lbs.

**No. 9522** - Same as 9590 except for 230 volt 50/60 Hz.

**No. 9615** - Same as 9590 except for 24 volt 50/60 Hz.

**NOTE:** Above valves are shipped without control switches. Use No. 202778 hand switch.

**NOTE:** These valves are furnished with pilot lines and adapters for the PE30\*, PE55, PE90 and PE120 series pumps. Call for more info. on these & other pump models.

#### 9589 3-Way, 2-Position (Pilot Operated) Solenoid Valve, 115 Volt, 60 Hz

This valve is for use with "Vanguard" power units. It's a subplate mounted, solenoid controlled, pilot-operated, 3-way, 2-position valve. Intended for use with single-acting cylinders, it provides the possibility of remote actuation. A

connection is provided on the valve body for a pressure switch and/or gauge. Port size is 3/8" NPT. Maximum operating pressure is 10,000 psi; maximum recommended flow rate is 5 gpm.

**No. 9589** - 3-way, 2-position (pilot operated), 115 volt 50/60 Hz solenoid valve.

**No. 9523** - Same as 9589 except for 230 volt 50/60 Hz.

**No. 9553** - Same as 9589 except for 24 volt 50/60 Hz.

**NOTE:** Valves are shipped without control switches. Use No. 202777 hand switch.

**NOTE:** The above are furnished with pilot lines and adapters for the PE30\*, PE55, PE90 and PE120 series pumps. Call for more info. on these & other pump models.

**NOTE:** When ordering any valve for a PE30 or PG30 series pump, 1/2" longer mounting screws are required. For valve Nos. 9513 and 9519 order four No. 11956 cap screws. For valve Nos. 9523, 9553 and 9589 order four No. 10855 cap screws. For valve Nos. 9522, 9590 and 9615 order four No. 10854 cap screws.

\* If used with the PE30 series pumps, the carrying handles must be removed from the pump.

### valves - In-line

#### 9596 Load Lowering valve

Here's a load lowering valve featuring precision metering for controlled cylinder return, built-in pressure relief and "posi-check" to hold the load. The 9596 permits free flow when extending the cylinder. The built-in check feature locks and holds the load in the raised position until the operator opens the valve. It may be pre-set to provide consistent metered return or the operator may select rate of return with each actuation. Port size is 3/8" NPTF. Pressure relief setting is 12,000 psi. Operating pressure is 10,000 psi and max. flow rate is 5 gpm.

**No. 9596** - Load lowering valve. Wt., 2.1 lbs.

#### 9597 Sequence valve

The 9597 is for use when one cylinder in a multiple cylinder set-up must advance before any other. To use, connect a pump to port "P" and separate cylinders to port "A" and "B." When pressure is applied to port "P," cylinder "A" will advance. Cylinder "B" will not advance until a predetermined pressure setting is reached in cylinder "A." The pressure setting is adjustable from 500 to 5,000 psi through the adjustment screw. It is factory preset at 1,000 psi. Port size is 3/8" NPTF. Maximum operating pressure is 10,000 psi and maximum recommended flow rate is 5 gpm.

**No. 9597** - Pressure control sequencing valve.

Sequencing pressure adjustable from 500 to 5,000 psi. Wt., 5.6 lbs.

#### 9608 Pressure Reducing valve

This valve gives you complete, independent pressure control to two or more clamping systems when operated by a single power source. The 9608 can be used to provide different pressures in various stages of a single system. Virtually zero leakage across the valve means each system can be operated by a single continuous pressure source.

**No. 9608** - Pressure reducing valve. 1/4" NPTF ports. Adjustable from 1,000 to 5,000 psi at outlet port B (secondary). Maximum operating pressure is 10,000 psi at inlet; 5 gpm maximum flow rate. Wt., 5.8 lbs.

#### 9720 Counter Balance valve

The counterbalance valve provides positive holding and controlled, "Chatter" free lowering of a load. The load is raised at the flow rate of the pump. The load is held when pump is shut off. When the pump valve is shifted to retract, the 9720 counter balance valve will continue to hold the load until the system pressure exceeds the pressure caused by the load. The counter balance will then allow the load to be lowered smoothly to the flow rate of the pump. Includes two male and two female half couplers, two hydraulic hoses, fittings and dust caps.

**No. 9720** - Counter balance valve.

**No. 9721** - Counter balance valve. Same as No. 9720 less couplers, hoses, fittings and dust caps.

#### 9575 Shut-Off valve

This is a needle valve for fine metering of hydraulic oil. You can use several for controlling multiple single-acting cylinders. 3/8" NPTF ports. Wt., 1.4 lbs.

**No. 9575** - Shut-off valve.

#### 9580 Check valve

This valve permits flow of hydraulic oil in one direction only. Has 3/8" NPTF male ends. Installs right in the hydraulic line. Wt., .4 lb.

**No. 9580** - Check valve.

#### 9581 Pilot Operated Check valve

This check valve permits free flow in one direction. Flow is blocked in the opposite direction until pilot pressure is applied. This prevents the loss of pressure if the valve is inadvertently shifted or the pump line is broken. Minimum cracking pressure is 60 psi. Required pilot pressure is approximately 16% of checked system pressure. Maximum operating pressure is 10,000 psi and max. recommended flow rate is 5 gpm.

**No. 9581** - Pilot operated check valve with 3/8" NPTF ports. Wt., 3.8 lbs.

**NOTE:** For use with open or tandem-center valves.



## Hydraulics

# Valves

### valves – In-line (continued)

#### 9623 “In-line” Pressure Relief valve

The 9623 is designed for remote locations in a hydraulic circuit when the maximum pressure requirements are less than the setting of the basic overload valve setting in the pump. This spring-loaded, direct-acting valve can be used with single- or double-acting cylinders. It is adjustable from 1,000 to 10,000 psi. Maximum recommended flow rate is 5 gpm.

**No. 9623** - Pressure relief valve with 3/8" NPTF ports. Wt., 2 lbs.

#### 9631 metering valve

It's perfect for systems that use large cylinders or extended lengths of hose. The No. 9631 controls surges by restricting the flow if it exceeds 7 gpm. When the flow subsides, the valve reopens automatically. Has 3/8" NPTF male end to thread into the return port of the system control valve, and it has a 3/8" NPTF female end so the return hose can be directly connected.

**No. 9631** - Metering valve. Wt., .2 lb.

#### 9633 “In-line” Pressure Regulator valve

Whether you use it with single- or double-acting cylinders, the No. 9633 allows you to adjust the

operating pressures at various values below the relief valve setting of the pump. You can easily adjust the regulator to maintain pressures between 300 and 10,000 psi. The No. 9633 maintains a given pressure setting within 3% over repeated cycles. Flow range is 17 cu. in. per minute to 6 gpm.

**No. 9633** - In-line pressure regulator with two 3/8" NPTF inlet ports and one 1/8" NPTF tank port. Includes 3' drain line kit. Wt., 1.9 lbs.

#### Rv21278 Series Relief valves

Provides economical means of protecting a hydraulic circuit against over-pressurization. This factory preset valve is designed for max. flow rate of 5 gpm. Furnished with 1/8" NPT male port. Wt., .2 lb.

**NOTE:** Care should be exercised to protect workers from hot, pressurized hydraulic fluid. Install only in an enclosed or shielded area.

Valve Part No.	Pressure Setting (psi)	Valve Part No.	Pressure Setting (psi)
RV21278-6	10,100 / 10,700	RV21278-50	5,100 / 5,700
RV21278-6	600 / 640	RV21278-52	5,300 / 5,900
RV21278-10	900 / 1,000	RV21278-55	5,600 / 6,200
RV21278-15	1,500 / 1,700	RV21278-57	5,800 / 6,400
RV21278-20	1,900 / 2,200	RV21278-60	6,100 / 6,700
RV21278-28	2,700 / 3,000	RV21278-65	6,600 / 7,200
RV21278-30	3,000 / 3,400	RV21278-70	7,100 / 7,700
RV21278-32	3,100 / 3,300	RV21278-75	7,600 / 8,200
RV21278-35	3,500 / 3,800	RV21278-80	8,100 / 8,700
RV21278-40	4,100 / 4,500	RV21278-83	8,400 / 9,000
RV21278-43	4,400 / 4,800	RV21278-86	8,700 / 9,300
RV21278-48	4,900 / 5,300	RV21278-88	8,900 / 9,600
		RV21278-90	9,100 / 9,700

Preset - Non-Serviceable



# Lifting & Jacking

## Cylinder and Pump Combination Sets

- Precision matched pumps and cylinders will handle hundreds of applications.

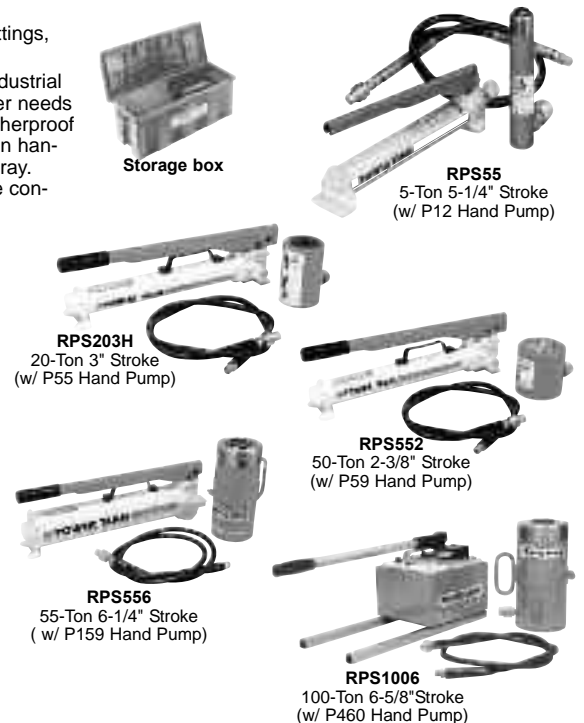
We've taken the guesswork out of cylinders and pump selection with these 15 matched sets. They include four styles of cylinders for positive, leak resistant operation. Each is equipped with a single-speed or two-speed hand pump for easy operation. Whatever requirements you have, the right combination is here: High, medium or low tonnage with long, medium or short

stroke. Each includes the necessary fittings, coupler and 6 ft hydraulic hose.

**No. 251220 Storage Box** - Rugged industrial strength material, strong as steel, never needs painting, won't rust, dent or chip. Weatherproof lid is self sealing and locking. Molded in handles and removable heavy duty utility tray. Water-tight, one piece bottom and side construction. Strong enough to stand on. (35" L x 13-1/2" H x 12-3/4" W)

Cyl. Cap. (tons)	Stroke (in)	Order No.	Retracted Ht. (in)	Handle Strokes Req. to Fully Extended Cyl.	Cyl. No.	Pump No.	Hose No.	Coupler No.	Pump Speed	Prod. Wt. (lbs)
<b>"C" Series Cylinders</b>										
5	5-1/4	RPS55	8-1/2	75	C55C	P12	9756	9798	Single	12
10	2-1/8	RPS102**	4-3/4	32	C102C	P55	9756	9798	Single	26
10	6-1/8	RPS106**	9-3/4	93	C106C	P55	9756	9798	Single	32.1
10	10-1/8	RPS1010**	13-3/4	154	C1010C	P55	9756	9798	Single	35.6
15	4-1/8	RPS154**	7-7/8	81	C154C	P55	9756	9798	Single	29
15	6-1/8	RPS156**	10-11/16	118	C156C	P55	9756	9798	Single	34
25	6-1/4	RPS256**	10-3/4	219	C256C	P55	9756	9798	Single	42.7
25	14-1/4	RPS2514**	18-3/4	285*	C2514C	P159	9756	9798	Two	62.7
55	6-1/4	RPS556**	11-1/8	268*	C556C	P159	9756	9798	Two	82.7
100	6-5/8	RPS1006	13-1/4	428*	C1006C	P460	9756	9798	Two	128.7
<b>"Shorty" Cylinders</b>										
30	2-7/16	RPS302**	4-5/8	61*	RSS302	P59	9756	9798	Two	40
50	2-3/8	RPS552**	5	89*	RSS502	P59	9756	9798	Two	50
100	2-1/4	RPS1002**	5-1/2	172*	RSS1002	P59	9756	9798	Two	81
<b>"Center-Hole" Cylinders</b>										
20	3	RPS203H*	6-1/16	80	RH203	P55	9756	9789	Single	40.5
<b>Aluminum Jacking Cylinders</b>										
55	6-1/8	RPS556A**	10-3/4	262*	RA556	P159	9756	9798	Two	47

\*Based on 50% of the strokes being made at low-pressure and 50% of the strokes at high pressure.  
\*\* Add suffix "B" to order set with optional storage box (EX: RPS102B, RPS203HB, etc.)



## maintenance Sets

Complete sets of pumps, rams and accessories that assemble quickly for pushing, pulling, lifting, pressing, straightening, spreading, or clamping. All pieces are contained in a rugged carrying case for taking to the job site. Rams are 10-ton capacity and operate at 10,000 PSI maximum.

**No. Im10H** -Basic Maintenance Set. Includes Hand Pump, 10-ton Ram, 10,000 PSI Gauge, Hydraulic Spreader, 6 foot Hose and Accessories. Wt. 73.8 lbs.,

**No. Im10E** - Deluxe Maintenance Set. Includes 1/4hp Electric Pump, 6" and 10" stroke 10-ton Ram, 10,000 PSI Gauge, Hydraulic Spreader, 6 foot Hose, and Accessories. Wt., 90.8 lbs.



# Jacks

## Hydraulic Bottle Jacks

Portable hydraulic power in a rugged, reliable unit.

Choose from this complete line of premium-quality, standard bottle jacks. Ideal for use in any number of industrial lifting and pushing applications.

The 9110B, 9015B, 9022B and 9030B feature a beveled base which allows the jack to "follow" the load, reducing the chance of dangerous side-loading.

Many jacks feature screw extensions and all can be used in the vertical, angled or horizontal positions.

Serrated or contoured saddles help stabilize the load for a safer lift.

All jacks meet ANSI B30.1 standards and carry the Power Team Marathon Lifetime Warranty.

**NOTE:** 110 ton jack features dual pumps for time-saving two-speed operation.



Hydraulic Bottle Jacks  
(9015a, 9033B, 9050a)

Cap. (tons)	Stroke (in)	Order No.	Retracted Ht. Min. (in)	Length of Screw Ext. (in)	Ht. w/ Screw Ext. (in)	No. Pump Strokes to Ext. Piston 1 in.	Saddle Dia. (in)	Base Size (in) Beveled Base†	Pump Handle Length (in)	Handle Effort @ Rated Cap. (lbs)	Carry Handle	Prod. Wt. (lbs)
<b>Hydraulic Bottle Jacks</b>												
2	4-1/2	9002A	7-1/8	1-15/16	13-9/16	5	1	4-11/32 x 2-9/16	12-1/4	75	no	4.8
3	4-1/2	9003A	7-1/2	2-3/8	14-3/8	10	1-1/8	4-1/2 x 2-27/32	19-1/4	45	no	5.8
5	4-3/4	9005A	7-7/8	2-3/4	15-3/8	12	1-3/8	5-3/16 x 3	21-7/16	55	no	8
8	4-3/4	9008A	7-7/8	2-3/4	15-3/8	18	1-1/2	6 x 3-1/2	23-13/16	75	no	12.1
12	5-7/8	9112A	9-1/2	3-1/8	18-1/2	26	1-7/8	6-1/2 x 4-3/16	23-13/16	60	yes	17.5
15	6-1/8	9015B	9-1/16	4-1/2	19-7/8	27	2-3/8	5-1/8 x 5-1/2	27-9/16	90	no	18.3
20	6-1/4	9120A	10-5/8	1-9/16	20-1/2	22	2	7-3/16 x 5-1/16	31-1/2	70	yes	28.5
22	6-1/8	9022B	9-7/16	4-5/16	20-1/2	36	2-3/8	6-1/2 x 6-5/16†	27-9/16	90	yes	23.6
30	6-1/4	9030A	11	-	17-1/4	35	2-3/8	7-9/16 x 5-9/16	39-3/8	50	yes	41.2
33	5-5/8	9033B	9-7/16	4-3/16	19-3/4	56	2-9/16	7-1/4 x 6-15/16†	27-9/16	88	no	32
50	6-3/4	9050A	12	-	18-3/4	35	3	9-5/16 x 7-3/8	39-3/8	85	yes	78
110	6-1/8	9110B	11-13/16	-	17-15/16	40/160*	4-3/8	13-3/8 x 11-7/16	27-9/16	79	yes	154.3

\* 2 Speed: Rapid Advance = 40 Strokes; Lift Mode = 160 Strokes

## Low Profile Bottle Jacks

The right choice for those lower clearance jobs.

All the quality, features and lifting capacity of the standard jacks in short form. The 12-ton and 20-ton models feature screw extensions for added versatility.

All jacks meet ANSI 1330.1 standard and carry the Power Team Marathon Lifetime Warranty.

**Horizontal applications** - All jacks operate both vertically and horizontally for use in a variety of lifting, pushing and spreading applications.

**Low Profile** - With such a low retracted height, you'll be able to work in the most confined spaces.



Low Profile Bottle Jacks  
(9012a, 9020a, 9130a)

Cap. (tons)	Stroke (in)	Order No.	Retracted Ht. Min. (in)	Length of Screw Ext. (in)	Ht. w/ Screw Ext. (in)	No. Pump Strokes to Ext. Piston 1 in.	Saddle Dia. (in)	Base Size (in) Beveled Base†	Pump Handle Length (in)	Handle Effort @ Rated Cap. (lbs)	Carry Handle	Prod. Wt. (lbs)
<b>Low Profile Bottle Jacks</b>												
12	3-3/4	9012A	6-3/4	3	13-1/2	26	1-7/8	6-1/2 x 4-3/16	23-13/16	60	yes	14
20	3-3/8	9020A	7-1/8	1-9/16	12	22	2	7-3/16 x 5-1/16	31-1/2	70	yes	22.2
30	3-1/8	9130A	7-1/8	-	10-1/4	35	2-3/8	7-9/16 x 5-9/16	39-3/8	50	yes	30.2

## Power Team Telescoping Bottle Jacks

These jacks offer greatly extended lifting capability

Telescoping jacks offer all of the quality features and capabilities of the standard bottle jack line with a bonus. The super long stroke of these jacks saves time and effort by eliminating the need to lift, crib, lift, etc. In most applications, the user can place the jack once and complete the lift.

The 9015X offers very low clearance capability, making it the ideal choice for forklift maintenance or machine lifting.

All jacks meet ANSI B30.1 standards and carry the Power Team Marathon Lifetime Warranty.

The taller 9006X, 9011X and 9013X all feature a unique beveled base that allows the jack to "follow" the load laterally as it is raised, greatly reducing side-loading of the piston.



Power Team Bottle Jacks  
(9006X, 9011X, 9013X)

Cap. (tons)	Stroke (in)	Order No.	Retracted Ht. Min. (in)	Length of Screw Ext. (in)	Ht. w/ Screw Ext. (in)	No. Pump Strokes to Ext. Piston 1 in.	Saddle Dia. (in)	Base Size (in) Beveled Base†	Pump Handle Length (in)	Handle Effort @ Rated Cap. (lbs)	Carry Handle	Prod. Wt. (lbs)
<b>Power Team Bottle Jacks</b>												
6	12	9006X	8-1/2	-	20-1/2	14	1-3/4	4-3/4 x 5-1/4†	27-9/16	79	no	14
11	10.3	9011X	7-7/8	2-11/16	20-7/8	25	1-5/8	6-5/15 x 6-1/2†	27-9/16	88	no	19.5
13	10	9013X	9-1/16	3-5/16	22-7/16	35	1-7/8	6-15/16 x 7-5/16†	27-9/16	79	yes	25
15	7-1/8	9015X	6-11/16	2-3/4	16-1/2	32	2-1/16	5-5/8 x 7-5/8	23-5/8	95	yes	26.5

## Hydraulics

# Jacks

## Heavy duty Industrial Hydraulic Jacks - JHJ Series

- Tested to 150% of rated capacities
- Not affected by temperature extremes
- Low profile truck models or standard models
- Rigidly adheres to ANSI and JIS standards
- Electrically welded base and cylinders to assure strength and eliminate leaks
- Common release valve assemblies and other interchangeable parts for quick repair are standard
- All Models work in upright, angle or horizontal position
- Pump handle included with all models

- Carrying handle on 12-1/2 - 100 ton models
- NOTE:** When used at an angle or in the horizontal position, pump must be in upright position and piston movement is reduced.

Model	Stock No.	Rated Cap. (ton)	Closed Ht. (in)	Piston Ht. (in)	Head Screw (H/in)	Max Ht. (in)	Base Size (LxW/in)	Net Wt. (lbs)
JHJ-2	453301	2	7-1/8	4-1/2	2	13-5/8	4 x 3-1/4	4
JHJ-3	453303	3	7-1/2	4-1/2	2-3/8	14-3/8	5 x 3	5
JHJ-5	453305	5	7-7/8	4-5/8	2-3/4	15-1/2	5-5/8 x 3-1/4	8
JHJ-8	453308	8	7-7/8	4-5/8	2-3/4	15-1/2	6 x 3-1/2	12
JHJ-12-1/2	453312	12-1/2	9-1/2	5-7/8	3-1/8	18-1/2	6-1/2 x 4-1/8	17
JHJ-12-1/2L	453313	12-1/2	6-3/4	3-3/4	3	13-3/8	6-1/2 x 4-1/8	14
JHJ-17-1/2	453317	17-1/2	10-3/8	6-1/2	3-1/8	20	7-1/8 x 4-5/8	23
JHJ-17-1/2L	453318	17-1/2	6-3/4	3-1/2	2-3/4	13	7-1/8 x 4-5/8	18
JHJ-22-1/2	453322	22-1/2	10-5/8	6-1/4	-	16-7/8	7-1/8 x 5-1/2	27
JHJ-22-1/2L	453323	22-1/2	7-1/8	3-3/8	1-1/2	12	7-1/4 x 5-1/16	22
JHJ-35	453335	35	11	6-1/4	-	17-1/4	8-3/8 x 5-1/2	47
JHJ-60	453360	60	12	6-3/4	-	18-5/8	9-1/4 x 7-3/8	75
JHJ-100	453379	100	12	5-23/32	-	17-11/16	14-31/32 x 10-7/16	210



## Hydraulic Toe Jacks

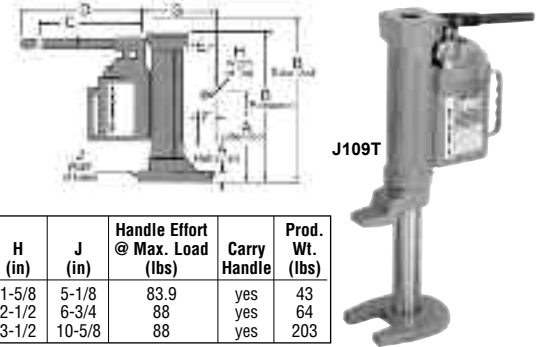
get under equipment with only 1-1/16" of ground clearance.

With lifting points on the toe and on the top, these extremely rugged jacks are ideal for machine lifting, rigging, lift truck service & much more.

Choose from 5.5-ton, 11-ton & now an amazing 27.5-ton lifting capacity. All jacks operate both

vertically & horizontally & swivel 360° for even greater versatility.

All jacks meet ANSI B30.1 standards & carry the Power Team Marathon Lifetime Warranty.



Cap. (Tons)	Max. Lift Stroke	Order No.	A Ret. (in)	A Ext. (in)	B Ret. (in)	B Ext. (in)	Strokes to Ext. Piston 1 in	C (in)	D (in)	E (in)	F (in)	G (in)	H (in)	J (in)	Handle Effort @ Max. Load (lbs)	Carry Handle	Prod. Wt. (lbs)
5.5	8-1/4	J58T	1-1/16	9-3/8	14-3/4	23	8	14-1/2	17-3/4	2-13/16	2-3/16	6-15/16	1-5/8	5-1/8	83.9	yes	43
11	9-1/4	J109T	1-1/16	10-3/8	16-1/2	25-3/4	13	14-1/2	17-3/4	3	2-3/16	7-7/32	2-1/2	6-3/4	88	yes	64
27.5	9-3/16	J259T	2-1/8	11-3/8	19-7/8	29-1/16	21	8-1/4	29-3/4	5-3/4	4	10-1/2	3-1/2	10-5/8	88	yes	203

## Economy Hydraulic Toe Jacks

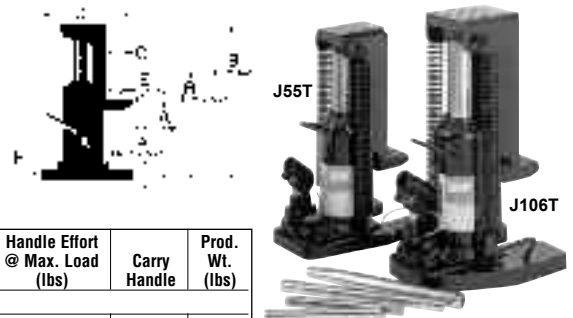
Just the power you need at a price you can afford.

These bottle jack-style toe jacks are loaded with many of the same features as our standard bottle jacks. But the toe-lift feature and swiveling pump handle socket make them ideal for machinery lifting and positioning. An internal pressure relief provides added safety by limiting the jack's lifting capability to the capacity of the toe. Spring return is an added feature on the larger jacks.

All jacks meet ANSI B30.1 standards and carry the Power Team Marathon Lifetime Warranty.

### Swiveling pump handle assembly

Available on the 5- and 10-Ton models, the swiveling jack assembly allows you to access and pump the unit from numerous positions.



Cap. (Tons)	Max. Lift Stroke	Order No.	A Ret. (in)	A Ext. (in)	B Ret. (in)	B Ext. (in)	Strokes to Ext. Piston 1 in	C (in)	D (in)	E (in)	F (in)	Handle Effort @ Max. Load (lbs)	Carry Handle	Prod. Wt. (lbs)	
Economy Hydraulic Toe Jacks															
2	4-7/8	J24T	5/8	5-1/2	9-1/4	14	14	1-7/8	7-1/8	2	4-15/16	42	yes	18.3	
5	4-7/8	J55T	1	5-7/8	11-1/2	16-3/8	22	1-7/8	10-1/8	3	7-1/4	60	yes	53	
10	5-7/8	J106T	1-1/4	7-1/8	12-7/8	18-3/4	31	2-1/2	11-1/2	3-15/16	9-1/2	73	yes	83.8	

## Sidewinder mini Jack

### 5, 10 & 20 Ton Capacity

The Sidewinder Mini Jacks may be small (fits in the palm of your hand) but don't let their compact size fool you. They pack a powerful punch, and are an important member of the Power Team's heavyweight Lifting Team

### Extremely Low Profile

Retracted height of just 2.56" for the smallest

jack and 5.13" for the 20 ton, allows you to slip this jack into the narrowest of crevices.

### vertical or Horizontal applications

Jacks operate either horizontally or vertically.

Handles function in line with base for easier use in confined spaces.

### Power in the Palm of your Hand

The perfect addition to any toolbox, this remark-

able little jack has multiple uses that are limited only by your imagination. Use it as a jack or a spreader. Use it to turn your mechanical gear puller (puller capacity must match jack capacity) into a hydraulic puller. Use it vertically or horizontally in limited clearance applications.



Cap. (tons)	Stroke (in)	Order No.	Retracted Ht. Min. (in)	Max. Height (in)	No. Pump Strokes to Ext. Piston 1 in.	Saddle Dia. (in)	Base Size (in)	Pump Handle Length (in)	Handle Effort @ Rated Cap. (lbs)	Carry Handle	Prod. Wt. (lbs)
5	3/4	9105A	2-1/2	3-3/8	30	1-9/64	2-29/32	9-7/16	57	No	4.2
5	1-1/2	9205A	3-1/2	5-1/8	38	1-9/64	2-29/32	9-7/16	57	No	5.3
10	1-3/16	9210A	4-3/4	5-7/8	36	1-21/32	4-21/64	17-21/64	62	No	12.1
20	1-3/16	9220A	5-1/8	6-5/16	46	2-5/64	4-23/32	23-13/16	77	No	17.6



## Jacks

### Service Jacks

- Strong steel side plates
- Swivel saddle
- Heat-treated parts at maximum stress points
- For heavy-duty applications
- 3, 5 and 10 ton models have a locking T bar handle and foot pump
- Hydraulic cylinder parts are high pressure tested at the factory
- Upper lifting limit safety bypass
- 2 & 2-1/4 ton models have two-piece handles

### Short Service Jacks

- Features safety overload
- Steel side plates
- Full swivel casters
- Two-piece, full length handle has knurled grip for safe, easy turning
- Full swivel, ball bearing rear casters are positioned for best load distribution, and optimal maneuvering

### air/Hydraulic Service Jacks

- Equipped with a labor-saving air pump and a high-speed cylinder piston that increases lifting speeds and efficiency
- Smooth, safe, jerk-free operation
- Hand pump can be locked into any position
- For use in tight spots or for vehicles with long overhangs
- Suitable for use on large trucks
- 4-1/8" extension screw height
- 85 - 100 PSI, 3 HP compressor power
- Lifting time with rated load 120 seconds; 35 seconds with no load

### Adapters for Ja SJ-20

Model	Stock No	Description (HxW/in)
20-A	454208	3/4 x 2-3/4
20-B	454209	3/4 x 2
20-C	454210	2-3/8 x 2
20-D	454211	3-7/8 x 2
20-H	454212	Adapter Holder Assembly

Model	Stock No.	Cap. (ton)	Min. (H/in)	Max. (H/in)	Saddle (Dia/in)	Overall Length (in)	Overall Width (in)	Handle Length (in)	Net Wt (lbs)
JSJ-2M	454320	2	5-1/8	19-1/4	5-5/8	36-1/4	13-3/4	41-1/2	94
JSJ-2-1/4C	454228	2-1/4	5-1/8	20	5-3/4	26	13-7/8	39-7/8	83
JSJ-2-1/4SJ	454325	2-1/4	5-1/8	19-1/4	5-5/8	25-7/8	13-3/4	41-1/2	83
JSJ-3M	454330	3	5-1/8	24	4-5/8	51-5/8	12-3/4	42-1/8	135
JSJ-5M	454350	5	5-7/8	22	5-3/4	55-1/2	14-1/2	42-1/8	177
JSJ-10M	454310	10	6-1/4	22	6-1/2	60-7/8	19-1/2	42-1/8	277
JASJ-20	454204	20	8-13/16	17-11/16	2-3/4	20-1/8	12-13/16	53	85



### Transmission Jacks

#### TJ-1760

- Designed for easy, one-man operation
- Two-way carrier tilt (fore and aft) two-way carrier movement (left and right)
- Swivel casters for quick maneuvering
- Handwheels to control all movements of table
- Safety chain
- Tow bar

#### TJ-2000

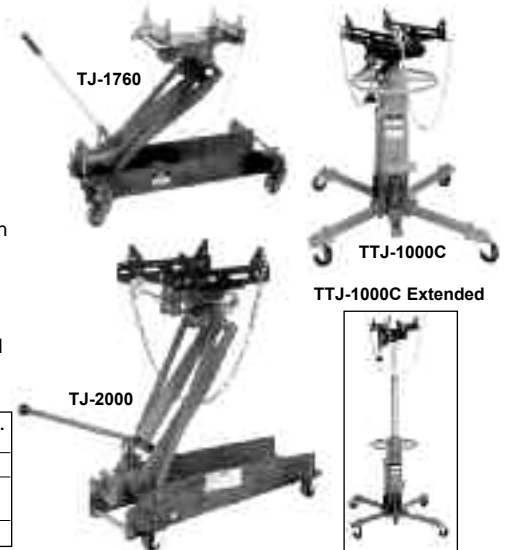
- Full 360° rotating pump handle can be operated in any position with either hand
- Easy, one-man operation
- Swivel casters for quick maneuvering
- Handwheels to control all tilts

- Two-way carrier tilt (fore and aft) two-way carrier movement (left and right)
- By-pass system prevents over extension ram stroke
- Safety chain.

#### TTJ- 1000C

- Two-stage hydraulic cylinder: 1st stage with 1 ton (2,000 lb) capacity; 2nd stage with 1/2 ton (1,000 lb) capacity
- Foot actuated pump
- Four legs with casters
- Tilting saddle
- Designed to use with raised rack or overhead garage hoist
- Two safety chains

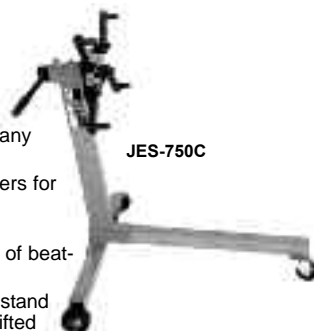
Model	Stock No.	Cap. (lbs)	Min. Ht. (in)	Max. Ht. (in)	Sideways Adj (in)	Backward & Forward	Base Size (in)	Saddle Size (in)	Net Wt. (lbs)
TJ-1760	450075	1,760	12-1/8	35	1-1/2	30°	19 x 35	7-3/4 x 14-1/8	175
TTJ-1000C	450010	1/2,000 2/1,000	34-3/4	1 / 55 2 / 73-1/2	1 R&L	10° / 15°	39-3/8 x 39-3/8	91/2 x 13-3/8	160
TJ-2000	450020	2,000	7-3/4	31-1/2	2-1/2	55° / 30°	16-3/8 x 33-3/8	7-7/8 x 14-3/16	124



### Engine Stand

#### JES-750C

- Holds any engine up to 750 lbs
- Engine can be rotated a full 360°
- Positive-action lock secures engine in any position
- Slant-back post centers load over casters for extra strength and rigidity
- Engine-mounting plate included with 4 adjustable support arms, and two sets of heat-treated attaching bolts
- Engine-mounting plate may be slid off stand and bolted to engine, then entire unit lifted and remounted on stand



Model	Stock No	Cap. (lbs)	Base (LxW/in)	Ht (in)	Net Wt (lbs)
JES-750C	442076	750	32-1/2 x 30	39	46

### Safety Ratchet Shop Stands

#### JES Series

- Heavy duty, all steel, welded construction
- The weight of the load prevents the ratchet pawl from disengaging while under load
- Rated capacities of 3, 6 and 12 tons
- Sold in pairs only

Model	Stock No	Mjn. Ht (in)	Max. Ht. (in)	Base Size (in)	Net Wt (lbs)
JSS-3	441003	11-3/4	17-1/4	7-5/8 x 8-5/8	18
JSS-6	441006	15	24-1/4	10 x 11-1/4	30
JSS-12	441012	19	30-3/8	12-3/8 x 14-1/4	70



**Hydraulics**

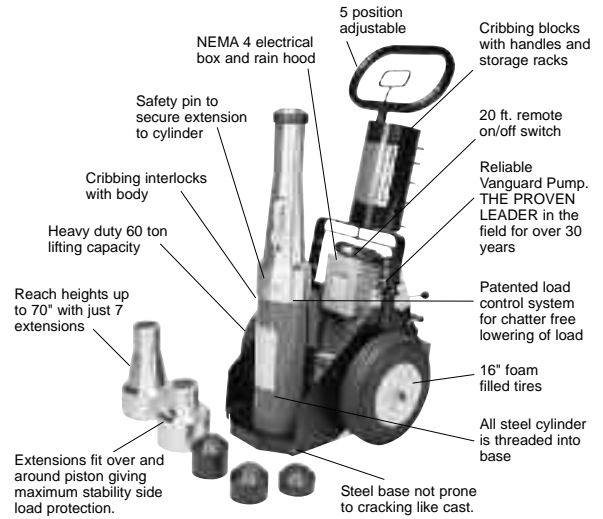
**Jacks**

**High Tonnage Portable Jack (Railroad Edition)  
60–100 Ton Capacity**

**Portable & compact, ideal for locomotive and railcar maintenance.**

- Patented Load Lowering Valve – Lowers load smoothly and safely. Eliminates dangerous chatter and bounce.
- Full range of rod extensions – Jack comes fully equipped with extensions to match lifting pad heights on most rolling stock. Max. lifting height to 70"
- Low collapsed height, long stroke – 24"(61 cm) collapsed height for low-clearance lift pads 14"(36 cm) stroke for maximum lift
- Adjustable, ergonomic handle – Handle tilts to start the job and is easily locked/unlocked without moving from

- operating position.
- NEMA 4 electrical box and rain hood – Pump motor and controls protected from water. Quiet operation
- Cribbing block set with handles and convenient storage rack – Provides solid mechanical load holding
- High-profile, low rolling resistance, foam filled tires – Jack can be moved and positioned with minimal effort. No chance of downtime due to punctured tires.
- Electric and Air Motor options – Quiet, powerful air and electric motor powered units available.



**Order Information**

Capacity (tons)	Stroke (in)	Order No.	Retracted Height (in)	Extended Ht. w/Extensions (in)	Product Wt. Less Cribbing & Ext.
60	14	*PLE6014K	24	70	522
60	14	*PLA6014K	24	70	522
60	14	*PLE6014K-220	24	70	522
100	14	Consult Factory	24	59	522

\* Includes cribbing block set stored on jack handle rack, and 7 extensions (1, 2, 3, 4, 5, 10, 20 inch)

- PLE6014 = Jack, Electric, includes: Cart, Pump & Cylinder
- PLE6014-220 = Jack, Electric (220 V.)
- PLA6014 = Jack, Air, includes: Cart, Pump & Cylinder
- CBS60 = Cribbing Block Set (5 cribbing blocks)
- PL60EXT = Extension Set (Consists of 7 extensions)

**Extensions (PI 60 Ext) (Included)**

Extension Length (in)	Order No.	Extension Wt. (lbs)
1	351931	4.9
2	351927	8.9
3	351928	14.1
4	351929	19.1
5	66053	20.9
10	66054	30.4
20	66055	48.6

**Lifting Range**

Lifting range (in 1" increments): 24" – 70". Only 3 extensions are needed to provide this range. Do NOT exceed 70" lifting range on 60 ton unit or 59" on 100 ton unit

**Power unit Specifications**

Order No.	Motor	Power Req.	Motor Control	Valve Function	Power cord	dBa @ 10,000 psi
PLE6014	1-1/8 HP 110/115 VAC*** 50/60 HZ Single Phase	25 amps	20' Remote Control	Lift Hold Lower Manual	Pigtail	80/95
PLA6014	Rotary Air Powered	50 CFM@ 80 PSI	20' Remote Air Control	Lift Hold Lower Manual	NA	82

\*\*\*For 220V order PLE6014-220 \*\*\*\*PLE6014-30-220

**Cribbing Blocks (CBS60) (Included)**

Qty.	Height (in)	Order No.
1	1-1/2	351954
4	3	351953



# Jacks

## Powerlift® – High Tonnage Portable Jack

- Modular design—pump and cart separates from cylinder and base.
  - Three tonnage capacity options—55 tons, 100 tons and 150 tons.
  - Three retracted height options—26", 33" & 45".
  - Two standard power options—air (PA55) and electric (PE55).
  - Two control options - remote motor control and remote motor/valve control.
  - Accessory options - jack module extensions, load holding rings and low temperature oil
- Standard Power Team hydraulic components-proven reliable yet easy to service. Modular design allows you to change jack modules to

suit your tonnage and/or height requirements. Select the tonnage and retracted height to fit your most frequent application—then choose additional jack modules to suit other lifting needs. Jack modules have swivel load caps which provide more secure load-holding.

Pump and cart modules have remote operation for maximum operator safety and control - choose "motor only" or "motor and valve" control. Easy to maneuver—large tires and small "footprint" make it easy to scoot into the tightest quarters, then locate the exact lifting position. Adjustable, heavy duty handle makes this jack easy to move and position. Handle can be used to transport jack on site with a forklift. Exclusive load-control system—provides positive, chatter-

free control when lowering the load. Shielded and sheltered hydraulic lines—for safer, longer trouble-free service. Use the pump module as a portable power station for your other double-acting cylinders (10,000 psi).

Cribbing blocks (optional)—these rings provide full rated mechanical load-holding capability. Must be used with jack module extension. (included in cribbing block sets).

Jack module extension (optional)—adds more versatility by extending your jack's reach. Can be ordered and used separately, but is included in cribbing block sets.

Low-temperature oil (optional) provides smooth, reliable operation in the coldest climate conditions.

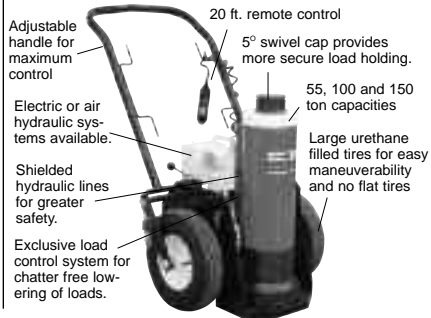
### Powerlift High Tonnage Portable Jacks

Select a <b>Jack Module</b> , then a <b>Pump &amp; Cart Module</b> , you then use the <b>Order Number</b> where the two module #'s cross. Complete jack assemblies can also be purchased separately.				<b>Pump &amp; Cart Module</b>				<b>Valve Type</b>	<b>Power Req.</b>	<b>Pump/Cart Mod. #</b>		
				<b>Air/Hydraulic Pump</b>		<b>Electric Pump</b>					<b>Manual</b>	<b>Solenoid</b>
				<b>Manual</b>	<b>Air Pilot</b>	<b>Manual</b>	<b>Solenoid</b>					
				<b>50CFM@80psi</b>		<b>115V. 50/60Hz*</b>						
<b>Cap. (Tons)</b>	<b>Stroke (in)</b>	<b>Ret. Ht. (in)</b>	<b>Jack Module #</b>	<b>JAM5526</b>	<b>JAR5526</b>	<b>JEM5526</b>	<b>JER5526</b>					
55	13-1/8	26	JM25	JAM5526	JAR5526	JEM5526	JER5526	<b>Order Number</b>				
		33	JM35	JAM5533	JAR5533	JEM5533	JER5533					
		45	JM45	JAM5545	JAR5545	JEM5545	JER5545					
100	13-1/8	26	JM210	JAM10026	JAR10026	JEM10026	JER10026					
		33	JM310	JAM10033	JAR10033	JEM10033	JER10033					
		45	JM410	JAM10045	JAR10045	JEM10045	JER10045					
150	13-1/8	26	JM215	JAM15026	JAR15026	JEM15026	JER15026					
		33	JM315	JAM15033	JAR15033	JEM15033	JER15033					
		45	JM415	JAM15045	JAR15045	JEM15045	JER15045					

\* For other electric power options, please call.

#### Powerlift®

Pump, cart and jack modules provide a portable and highly flexible lifting solution for those large lifting needs.



Pump & cart module easily separates from Jack module. Order extra jack modules for a variety of lifting needs.



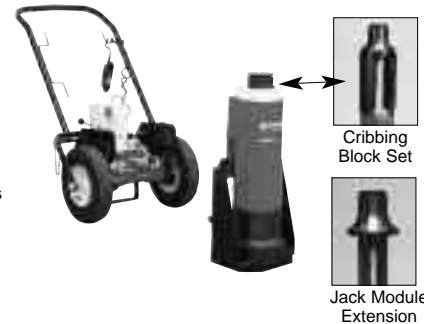
Manual valve with remote operated motor or remote motor/valve options are available

### Cribbing Block Set - Includes One Jack module Extension

Order No.	55 Ton CBS55		100 Ton CBS100		150 Ton CBS150	
	1	4	1	4	1	4
No. in Set	1	4	1	4	1	4
A	1-1/2	3	1-1/2	3	1-1/2	3
B	1-3/4	3-1/4	1-3/4	3-1/4	1-3/4	3-1/4
C	5-1/2	5-1/2	7-3/8	7-3/8	8-3/4	8-3/4
Jack Module Ext. Total Stack Ht. Prod. Wt. (lbs)	6-13/16 20-5/16 36		7 20-1/2 68		6-5/8 20-1/8 85	

- Convert jack into stable mechanical cribbing device.
- Increases retracted height up to 20-1/2 inches.

- Increases jack's reach.
- Swivel cap (5° max.) provides more secure load holding.



### Jack module Extension

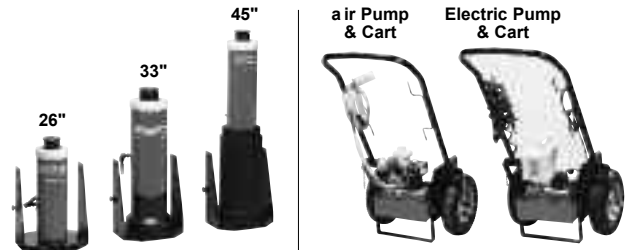
Cap. (tons)	Order No.	Dimensions (in)								Prod. Wt. (lbs)
		A	B	C	D	E	F	G	H	
55	421365	8-13/16	6-13/16	5	2-5/8	1-11/16-8UN	2-1/2	2-5/8	3-5/8	21
100	421366	9	7	6-7/8	3-7/8	2-3/4-12UN	3-3/4	3-7/8	3-3/4	40
150	421367	8-5/8	6-5/8	8	4-1/2	3-1/4-8UN	4-3/8	4-1/2	3-1/2	50

### Jack modules

Cap. (tons)	Stroke (in)	Order No.	*Retract Ht. (in)	*Extended Ht. (in)	Pro. Wt. (lbs)
55	13-1/8	JM25	26	39-1/8	197
		JM35	33	46-1/8	224
		JM45	45	58-1/8	252
100	13-1/8	JM210	26	39-1/8	291
		JM310	33	46-1/8	346
		JM410	45	58-1/8	406
150	13-1/8	JM215	26	39-1/8	384
		JM315	33	46-1/8	466
		JM415	45	58-1/8	554

#### Jm model Shown

\*Retracted /Extended Height



### Pump & Cart modules

Pump Type	Order No.	Valve Type	Valve No.	Power Required	Remote Control	Prod. Wt. (lbs)
Air PA55 Series	PMA55	manual	9500	50 cfm @ 80 psi	motor 20 ft.	180
	PMA55S	air pilot	9594		motor & valve 20 ft.	185
Electric PE55 Series	PME55	manual	9500	1-1/8 hp 115V, 50/60 Hz 25 amps*	motor 20 ft.	195
	PME55S	solenoid	9592		motor & valve 20 ft.	200

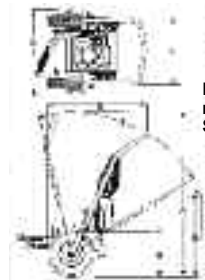
\* For other electric power options, consult Hanes Supply

### dimensions (in)

Model Series	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	G (degrees)	H (in)
PMA & PME	57-5/8	29-5/8	53-1/4	30	34-5/16	23-3/8	*70°	16" Tire Dia.

\* Total range with varying degree increments.

Pump & cart modules contain hydraulic pump, cart, remote control & all hoses & fittings required to connect to a jack module. Jack modules easily separate from the pump & cart module. Extra modules may be purchased for a wide variety of lifting applications.



PE model Shown

## Hydraulics

# Jacks

### Inflatable Jacks

- Space age reinforced, multi-layer aramid construction, widely overlapping on all sides. Tested at 175 psi
- Non-conducting material resists oil, ozone & most chemicals. Cold resistant down to -40° F, heat resistant up to 240° F (short term) or 200° F (long term)
- Field-replaceable nipples are made of tough steel, with internal thread to prevent abrasion damage. Ideal needle aperture of 0.25" allows rapid inflation, w/o risk of icing, and permits a safe lowering speed
- Inflation hose system is color-coded (red & yellow) for easy recognition when using more than one jack
- The controller, shut-off & air hoses are all equipped with USA industrial interchange style air couplers. Female half coupler bodies have a locking collar, protecting operator from accidentally disconnecting jack while under load
- Single jack controller with "dead man" control (350090). Can be used individually, or in multi-

- To regulate any number of jacks desired
- Uninflated jacks are only 1" thick, making seemingly impossible lifting tasks routine. Any non-explosive gas or water can be used for inflation.
- Surface of jack has a non-skid pattern, assuring that the jack won't "walk away" from the job. Jacks can be used to lift a load from an uneven surface, are tolerant of side-loaded applications.
- Heavy attachment straps are provided for attachment of a rope or hook to position the jack from a safe distance.

### Accessories

- No. 350090** - Air controller. Single jack controller with "dead man" control. Equipped with separate pressure relief valve and pressure gauge. Wt., 1.9 lbs.
- No. 350207** - Shut-off hose. White, 13" long. Built-in shut-off valve and pressure relief valve. Includes No. 250341 female quick coupler and No. 250353 male quick coupler. Wt., .7 lb.

- No. 350208** - Air hose. Red, 30' long. Includes No. 250341 female quick coupler and No. 250342 male quick coupler. Wt., 6 lbs.
- No. 350209** - Air hose. Blue, 30' long. Includes No. 250341 female quick coupler and No. 250342 male quick coupler. Wt., 6 lbs.
- No. 250341** - Female quick coupler. 0.25" industrial interchange x 0.38" I.D. hose. Wt., .5 lb.
- No. 250342** - Male quick coupler. 0.25" industrial interchange x 0.38" I.D. hose. Wt., .1 lb.
- No. 250343** - Female quick coupler. 0.25" industrial interchange x 1/8" NPT female. Wt., .1 lb.
- No. 250353** - Male quick coupler. .25" industrial interchange x 1/8" NPT male. Wt., .1 lb.
- No. 250682** - Female quick coupler. 0.25" industrial interchange x 1/4" NPT male. Wt., .1 lb.
- No. 15235** - Connector 0.13" NPT male x 1/4" NPT female. Wt. 1 lb.
- No. 307159** - Pressure reducing valve. Allows use of bottled gases to operate jacks (works on CGA-580 Nitrogen/Argon/ Helium bottles). Contains standard bottle fitting on inlet and 0.25" industrial interchange (female) outlet. Wt., 4 lbs.

Lifting Cap. (tons)	Lifting Ht. (in)	Order No.	Air Contents 116 psi (cu. ft.)	Max. Working Press (psi)	Length (in)	Width (in)	Collapsed Ht. (in)	Prod. Wt. (lbs)
1.1	2.70	IJ 13	.08	116	5.50	5.10	1.00	1.0
3.6	4.70	IJ 45	.50	116	10.00	7.90	1.00	3.0
7	6.30	IJ 76	1.48	116	12.00	12.00	1.00	4.0
12	8.80	IJ 128	3.40	116	15.70	15.70	1.00	8.0
23.8	12.00	IJ 2211	9.50	116	21.70	21.70	1.00	16.0
34	14.00	IJ 3213	16.40	116	25.60	25.60	1.00	22.0
46.3	16.40	IJ 4416	25.70	116	29.50	29.50	1.00	29.0
74.6	20.50	IJ 7320	51.40	116	37.40	37.40	1.20	58.0



(A) As the jack is inflated (B), this effective area decreases (C) due to the rounded shape of the jack. Lifting capacity also decreases.

Stack up two jacks together to increase effective lifting height.



### 20 & 30 Ton Post Tension/Stressing Jacks

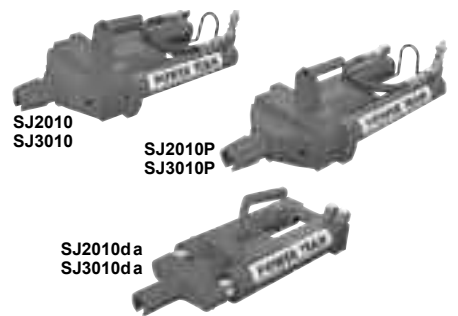
Power Team Monostrand Stressing Jacks are the most durable in the industry. Ideally suited for work on slab-on-grade where dirt, heat and high volume use take their toll. Available in single- or double-acting models. A full line, of Grippers and Nose Pieces, is available to adapt strand jacks to .375", .437", .500" and .600" dia. strand that may be used with various types of anchors, wedges and pocket styles. Post Tension/Stressing Jack, Single-Acting, Spring Seater or Power Wedge Seater:

- Available for up to 0.60" dia. strand in power seater and spring seater models.
- Standard 10.00" stroke; other stroke lengths available on special order.
- A full line of nose pieces.
- Dead-end seaters for production and field work available on special order.
- Service repair is simple; components are long lasting and easily replaced.

- 3.00" detachable seater nose assembly easily replaced with optional 6.00" nose assembly.
- Post Tension/Stressing Jack, double-acting, Power Seater:**
- The jack of choice for high-rise and elevated work, thanks to fast return time and light weight.
- Built of a single piece of hardened steel, machined to an exacting standard.
- 3.00" detachable power seat nose assembly easily replaced by optional 6.00" nose assembly.
- All hydraulic fluid controls are interior designed; more efficient and safer operation during tensioning, retraction, power lock circuits.
- Standard 8.50" stroke; others available on special order.
- Available for up to 0.60" dia. strand applications.
- Service repair is simple; components are long lasting and easily replaced.

- **No. SJ2010** - 20 ton post tension jack, single-acting, spring seater, 0.50" strand.
- **No. SJ2010P** - 20 ton post tension jack, single-acting, power seater; 0.50" strand.
- **No. SJ2010da** - 20 ton post tension jack, double-acting, power seater, 0.50" strand.
- **No. SJ3010** - 30 ton post tension jack, single-acting, spring seater; 0.60" strand.
- **No. SJ3010P** - 30 ton post tension jack, single-acting, power seater; 0.60" strand.
- **No. SJ3010da** - 30 ton post tension jack, double-acting, power seater; 0.60" strand.

**Control valves:** Specially designed Power Team valves for controlling post tensioning stressing jacks are available.



Cyl Cap. (tons)	Stroke (in)	Order No.	Recommended Pump for this Stressing Jack	Strand Dia. (in)	Seater Type	Oil Cap. (cu.in.)	Cyl. Effective Area (cu.in.)	Internal Pressure at Cap. (psi)	Tons at 10,000 psi	A (in)	B (in)	C (in)	Wt. (lbs)
20	10.00	SJ2010	PE604T	.375-.50	Spring	45.2	4.5	8,948	22.4	21.00	9.00	6.50	55.0
20	10.00	SJ2010P	PE604PT	.375-.50	Power	45.2	4.5	8,948	22.4	21.00	9.00	6.50	55.0
30	10.00	SJ3010	PE604T	.375-.60	Spring	63.6	6.3	9,549	31.4	22.00	10.20	7.00	76.0
30	10.00	SJ3010P	PE604PT	.375-.60	Power	63.6	6.3	9,549	31.4	22.00	10.20	7.00	76.0
20	8.50	SJ2010DA	PE604PT	.375-.50	Power	53.0	5.3	7,575	26.4	18.50	7.50	6.50	42.0
30	8.50	SJ3010DA	PE604PT	.375-.60	Power	67.6	7.9	7,554	39.7	18.50	8.50	6.50	52.0

# Spreaders & "C" Clamps

## Hydraulic Spreaders

### HS2000 1 ton capacity hydraulic spreader

- Full 2000 lb. capacity at 10,000 psi.
- Can be dead-ended at 4" spread under full load!
- High strength alloy steel forged upper and lower jaws.
- Jaws are spring-return, and retract automatically when the pressure is released.

It's a hydraulic pry bar! Don't let its compact size fool you. This hydraulic spreader is rated at a full 1 ton capacity, and that's enough for a wide variety of jobs. Working in tight spots is no problem, either it needs only a 9/16" clearance to engage the jaws. And with a big 4" spread, it can do what a standard pry bar or wedge can do... only better! Lift or move a machine, use it as a clamp, spread concrete forms or do straightening work. Conforms to ANSI B30.1 standards.

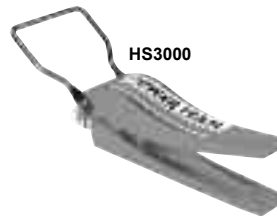
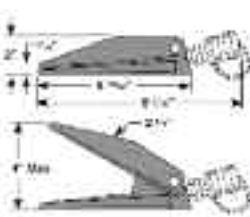
**No. HS2000** - 1 ton capacity hydraulic spreader. 4" max. spread. Wt., 4.8 lbs.



### HS3000 1-1/2 Ton Capacity Hydraulic Spreader

- Full 3000 lb. capacity at 10,000 psi. Exceeds the capacity of similar competitive units!
- Spread range: 1-1/4" to 11-1/2"
- Can be dead-ended at 1-1/2" spread under full pressure; rated at 1-1/2 ton capacity with jaws fully open. Capacity is greater with jaws partially open.
- Jaws are spring-return, and retract automatically when the pressure is released.

A larger hydraulic pry bar! Ideal for lifting or prying jobs where space is extremely limited... closed jaw spread is only 1-1/4". Constructed of high strength alloy material, and tested to conform to the demanding ANSI B30.1 standard. Ideal for lifting machinery, clamping, positioning



concrete forms, spreading rebar or performing straightening tasks.

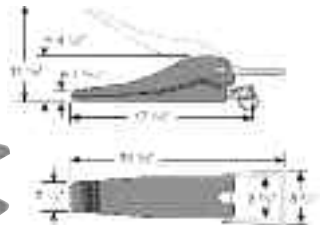
**No. HS3000** - 1-1/2 ton capacity hydraulic spreader. Wt., 22 lbs.

#### SPECIFICATIONS

Max. rated capacity ..... 1 ton @ 10,000 psi  
 Max. spread ..... 4"  
 Min. clearance required ..... 9/16"  
 Jaw material ..... forged alloy steel  
 Cu.in. oil required ..... .63

#### SPECIFICATIONS

Max. rated capacity ..... 1-1/2 ton @ 10,000 psi  
 Max. spread ..... 11-1/2"  
 Min. clearance required ..... 1-3/16"  
 Jaw material ..... high strength alloy material  
 Cu.in. oil required ..... 3.50



## Hydraulic flange Spreaders

No more will you need to resort to the "hammer and chisel" method of separating pipe flanges! The HFS3A, 5 ton capacity and HFS6A, 10 ton capacity Flange Spreaders will do the job in a fraction of the time and with a lot less effort. Both spreaders are furnished with a standard 60° wedge (an optional 30° "Thin" and/or 60° "Blunt" wedge is available as an accessory) suitable for use with most flanges. The HFS3A is designed for use in applications where the total thickness of the flanges and the maximum spread gap is 3" or less and the flange bolts are a minimum of 11/16" diameter. The HFS6A is designed for use in applications where the total thickness of the flanges and the maximum spread gap is 6" or less and the flange bolts are a minimum of 13/16" diameter.

We recommend using flange spreaders in pairs to provide even spreading force. A P55, P591 P157, PA6 or PE(PR) 102 is suggested as a suitable pump for powering the HFS3A or HFS6A Hydraulic Flange Spreaders.

**No. Hf S3a** - 5 ton flange spreader with 60° sharp wedge. Wt., 9 lbs.

**No. 350822** - Optional 60° blunted wedge for HFS3A. Wt., .9 lb.

**No. 350823** - Optional 30° wedge for HFS3A. Wt., .9 lb.

**No. Hf S6a** - 10 ton flange spreader with 60° sharp wedge. Wt., 18 lbs.

**No. 350550** - Optional 60° blunted wedge for HFS6A. Wt., 1.9 lbs.

**No. 350549** - Optional 30° wedge for HFS6A. Wt., 1.5 lbs.

## Hydraulic "C" Clamps

### CC5, CC10, CC25 Hydraulic "C" Clamps

- Offered in 5, 10 and 25 ton capacity. Used with Power Team "C" series hyd. cylinders of comparable capacity.

Typical applications of these new units include clamping, pressing, and bending operations. Especially useful in welding and metal fabrication industries to aid in fit-up of sheet or plate steel. Each "C" clamp is designed to withstand full rated capacity of the cylinder for which it's intended. To minimize the effect of off-center loading, the CC5, CC10 and CC25 clamps are designed to be used with the 350144 and 350145 swivel caps. On the CC10 and CC25, swivel caps can be mounted in the base of the "C" clamp, in the end of the cylinder piston rod, or both locations, if desired. On the CC5, the base is designed to accept the 350144 10-ton capacity swivel cap. No swivel cap is available to fit the rod end of the 5-ton "C" series cylinder itself.

**No. CC5** - "C" clamp, 5-ton cap., less hydraulic cylinder. Wt., 25 lbs.

**No. CC10** - "C" clamp, 10-ton cap., less hydraulic cylinder. Wt., 50 lbs.

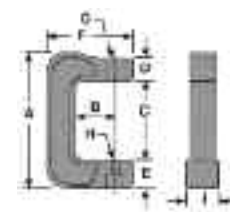
**No. CC25** - "C" clamp, 25-ton cap., less hydraulic cylinder. Wt., 65 lbs.

Order No.	Dimensions (in)										Wt.
	A	B	C	D	E	F	G	H	I		
CC5	12-3/8	3-3/4	7-5/16	2	2-1/2	7-3/4	1-1/2 - 16 un	7/8	3	25	
CC10	15-7/8	6	9-13/16	2	3	10-3/4	2-1/4 - 14 uns	7/8	3-1/2	50	
CC25	21	6	13	3	4	12-5/16	3-5/16 - 12 uns	1-7/16	4-5/8	65	

Wedge Angle	60° (std.)	30°	60° (std.)	30°
	(Blunt-End Wedge Optional)	(Optional)	(Blunt-End Wedge Optional)	(Optional)
Min. Flange Opening	1/16" 60° blunt: 1"	1/16"	1/16" 60° blunt: 1-1/2"	1/16"
Max. Flange Opening	1.55"	.72"	2.08"	.970"
Max. Total Combined Flange Thickness	3-1/2"	3-1/2"	6-9/16"	6-9/16"
Pin Dia.	11/16"	11/16"	13/16"	13/16"



Swivel Caps		Threaded Adapters		Pushing Adapters		Pushing Adapters		V Pushing Adapters		Pushing Adapters	
10 ton	25 ton	10 ton	25 ton	10 ton	25 ton	10 ton	25 ton	10 ton	25 ton	10 ton	25 ton
350144*	350145	38597	38953	201923**	34510**	201454**	34511**	34806**	34807**	28228**	34807**
A-1-3/8"	A-2"	A-1-8"	A-1-1/4 - 7"	A-3-1/8"	A-3-1/4"	A-3-1/16"	A-3-1/4"	A-2-5/8"	A-3-1/8"	A-2-3/8"	A-2-7/8"
B-3/4"	B-1"	B-1-8"	B-1-1/2 - 16"	B-2-1/4"	B-2-5/8"	B-2-5/8"	B-2-5/8"	B-1-8"	B-1-1/4 - 7"	B-1-8"	B-1-1/4 - 7"
		C-3/4"	C-2-3/4"	C-3-3/8"	C-5-7/8"	C-5-11/16"	C-5-7/8"	C-1-1/2"	C-1-3/4"	C-1-1/2"	C-1-3/4"
		D-2"	D-4-3/8"	D-1/2"	D-3/4"	D-3/4"	D-1"	D-1"	D-1-1/4"		
		E-1-8"	E-1-1/4 - 7"	E-1-8"	E-1-1/4 - 7"	E-1-8"	E-1-1/4 - 7"				



**Hydraulics**

# Splitters/Punches/Shop Presses

## Hydraulic Nut Splitter - HNS Series

### Hydraulic nut splitter, 15 ton capacity.

Now you can simply "dial-in" the size of the nut you want to split, without the worry of damaging the bolt. Just align the mark on the cutter blade with the scale on the frame of the splitter. The specially designed "tool" steel cutter blade penetrates the nut to the precise point where it cracks. And because the cutter blade is preset, it mechanically stops short of the bolt threads. The nut splitter features a dramatically improved cutter blade with an 800% greater resistance to chipping and breaking over previous models. The new design allows you to rotate the blade

180° within the frame. This allows you to use both sides of the cutter blade, and in fact, doubles the life of the cutter blade. The HNSI 50 features a rugged one-piece cutting frame coupled to a heavy-duty swiveling hydraulic cylinder. With its compact size, you can use it in confined areas where it will deliver up to 15 tons of force, enough to split the toughest "fused" or rusted-on grade 2H nuts used on up to 3/4" dia. bolts (1-1/8" hex size). The softer SAE grade 2 nuts up to 1" bolt size (1-1/2" hex size) are easily cut.

**No. HNS150** - 15 ton hydraulic nut splitter. Comes with a No. 9796 half coupler. Wt., 8.1 lbs.

**No. 308840** - Replacement cutter blade for HNS150 (not covered by warranty). Wt., .7 lb.

### Hydraulic nut splitter, 25 ton capacity

For use on 1-1/8" to 2-1/4" hex nuts, this splitter has the power to crack the toughest big nuts. The specially designed heat-treated blade is pushed into the nut, cracking it and expanding it. A second cut opposite from the first may be used to separate the nut into halves for easy removal. When the job is completed, the blade returns to the starting position.

**No. HNS225** - 360° swivel body, 25 ton capacity nut splitter with blade. Comes with a C252C hydraulic cylinder. For use on 1-1/8" to 2-1/4" hex nuts. Length: 14W. Wt., 29 lbs.

**No. 308022** - Replacement cutter blade (not covered by warranty). Wt., 1 lb.

### dimensions

Order No.	Dimensions (in)						Head Tkns.
	A	B	C	D	E	F	
HNS150	2-7/8	3-3/8	7-7/8	2-3/4	10-3/8	2-1/16	1
HNS225	4-1/4	6	14-3/8	3-7/8	N/A	3-1/4	1-1/2

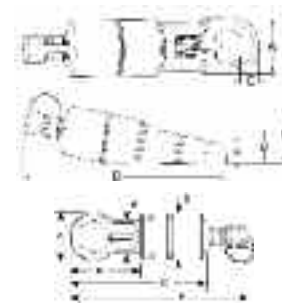


Align mark on cutter blade with scale.

### Specifications

HNS150, 15 ton and HNS225, 25 ton at 10,000 psi (max.)

Nut Grade Nut Splitter Cap.	2 or A		5 or B		8 or C		2H	
	15 ton	25 ton	15 ton	25 ton	15 ton	25 ton	15 ton	25 ton
Hex. Size, Max.	1-1/2	2-1/4	1-1/2	2-1/4	1-5/16	2-1/16	1-1/8	1-11/16
Bolt Size, Max.	1	1-1/2	1	1-1/2	7/8	1-3/8	3/4	1-1/8
Nut Thickness, Max.	1	1-1/2	55/64	1-9/32	7/8	1-11/64	3/4	31/32
Hex Size, Max.	1/2	1-1/8	1/2	1-1/8	1/2	1-1/8	1/2	1-1/8



HNS150

f or HNS150a

HNS225

14  
Hydraulics

## Hydraulic Punch - 35 ton Capacity (20 Ton Punch & kit also available)

- Rated to handle mild steel, aluminum, and copper up to 1/2" thick.
- Used with any 10,000 PSI Power Team hydraulic pump.
- C-frame is forged, not cast, for greater strength and durability.
- Punches a smooth, precise hole in just seconds—much faster and easier than drilling.
- Carrying handle for precise locating on work-piece.
- Dual action stripper holds material during punching operation and strips material from punch on return.
- Scribe lines on stripper aid in locating the punch for positioning on workplace.
- Four punches and dies available as a kit or

separately, to punch 7/16", 9/16", 11/16", and 13/16" round holes.

**No. HP35** - Hydraulic punch, 35 ton capacity. Includes metal carrying case and die change tools. Wt., 42 lbs., 7 oz.

**No. HP35S** - Hydraulic punch w/punches & dies. Includes No. HP35 punch, metal carrying case, punch & die set No. 250459. Wt., 44 lbs.

**No. HP35P** - Hydraulic punch set, W/hyd. Includes same items as No. HP35SP below, except does not include punch & die set. Wt., 86 lbs. 4 oz.

**No. HP35SP** - Hydraulic punch set, complete with hydraulics. Includes No. HP35 hydraulic punch, PE172 pump, No. 9756 hose, No. 9798 hose half coupler, punch and die set No. 250459, and metal carrying case. Wt., 87 lbs., 12 oz.



HP20

HP35SP

HP35

Call for complete specifications & dimensions

## 10 Ton Bench, f floor Press

- Ideal size for hundreds of maintenance applications.
- Bench press is portable, floor press can be used horizontally.

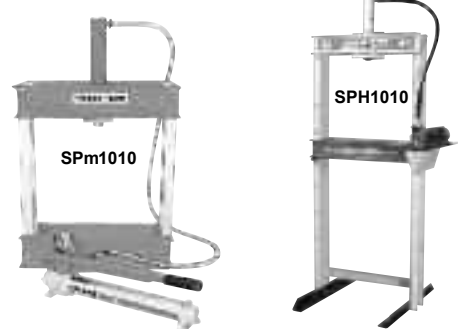
These 10 ton presses are ideal for hundreds of small pressing jobs; for repairing small motors and armatures the bench press can't be beat. The floor presses are perfect for removing or installing gears, bearings or other press-fit parts. 4-post design makes for easy access through

uprights. The bench press gives a 15-3/8" X 18" work area. The floor press bed height is adjustable from 5" to 41" with horizontal daylight of 21". Hydraulics included with the presses include a P55 single speed hand pump or a PE102 or PE104 'Quarter Horse' electric/hydraulic pump. Gauges and fittings are included with the press. The C1010C single-acting ram delivers a big 10-1/8" stroke. The RD1010 double-acting ram delivers a 10" stroke.

### Pump Electrical Specifications

**PE 10 Series** - 1/4 hp, 115 volt, 60 cycle, single phase. Also available in 230 volt, 50 cycle, add suffix "-220" to order no.

**NOTE:** Accessories are available



SPM1010

SPH1010

Cap (tons)	Type Ram Used	Stroke	Ram Model	Order No.	Speed (in./min. †††)	Advance Pressing	Type Pump	Pump Model †	Wt. (lbs)
10 Bench	Single-Acting	10-1/8	C1010C	SPM1010	.06 in./Stroke		Hand	P55	91
10 Floor	Single-Acting	10-1/8	C1010C	SPH1010	.06 in./Stroke		Hand	P55	171
				SPE1010	107	7.5	Elec. ††	PE102	175
10 Floor	Double-Acting	10"	RD1010	SPE1010D	107	7.5	Elec. ††	PE104	192

† Optional air/hydraulic pumps available on request. †† Holds pressure with motor shut off.  
††† Typical performance based on 100 psi and 10,000 psi pump specifications. Actual speeds may vary with operating conditions.

## Shop Presses

### 25 Ton "C" f rame Press

- Can be bench mounted or mounted on optional pedestal base.
  - Ram head is adjustable to three positions.
- For those everyday maintenance jobs, make the SPM256C your choice. It delivers a full 25 tons of pressing force in a small area. When bench mounted, the press requires less than 1.5 sq. ft. of space. If used on the optional pedestal, approximately 4 sq. ft. of floor space is required. The open throat design makes loading and unloading work fast and easy. The ram

head adjusts to three convenient working positions, giving you up to 20 1/4" daylight. The ram delivers a 6 1/4" stroke. The SP256C is equipped with an efficient P59 hydraulic hand pump.

#### Pedestal base No. 60846

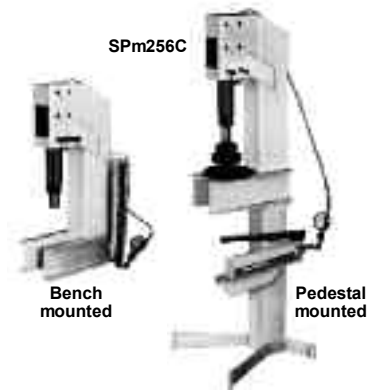
This optional pedestal provides a stable base for your SPM256C. It takes up only about 4 sq. ft. of space and includes a bracket for mounting the pump on the side of the press. It must be ordered separately. Wt., 76 lbs.

NOTE: Please call for info. on Accessories.

Cap. (tons)	Type Ram Used	Stroke	Ram Model	Order No.	Speed**		Type Pump	Pump Model	Wt. (lbs)
					Advance	Pressing			
25	Single-Acting	6-1/4	C256C	SPM256C*	.129 in./stroke	.03 in./stroke	Hand	P59	240

\*SPM256C does not include No. 60846 pedestal base.

\*\* Typical performance based on pump specifications. Actual speeds may vary with operating conditions.



Bench mounted

Pedestal mounted

### 25 Ton "Economy" Shop Press

- Rugged, yet reasonably priced press for those frequently performed pressing jobs.
  - Lower bed adjusts to desired height.
- This rugged press does the work of some of the big presses at a not-so-big price. It's ideal for many of the "in-between" jobs you see almost daily. The large working area under the ram makes positioning of even bulky work fast and

easy. Your choice of hand pump or remote control electric pump plus a spring return ram with 6-1/4" stroke are a perfect combination for frequently performed pressing jobs. Rapid ram advance and return also saves time on those repetitive jobs. A handy winch and cable mechanism quickly and easily raises or lowers the press bed to desired working height, locking securely into place.

Cap. (tons)	Type Ram Used	Stroke	Ram Model	Order No.	Speed (in./min.)††		Type Pump	Valve Type	Pump Model	Wt. (lbs)
					Advance	Pressing				
25	Single-Acting	6"	C256C	SPA256	9.8	1.2	Air	2-Way Foot	PA6	435
				SPM256	.129 in./stroke	.03 in./stroke	Hand	Load-Release	P59	452
				SPE256	46.6	3.3	Elect.	2-way†	PE172	464

† Holds pressure with motor shut off. Also has an automatic dump setting. Furnished with a 10' remote motor control.

†† Typical performance based on 100 psi and 10,000 psi pump specifications. Actual speeds may vary with operating conditions.

#### Pump electrical specifications

**PE 17 Series** - 1/2 hp, 115 volt, 60 cycle, single phase. Also available in 230 volt, 50 cycle, add suffix "-220" to order no.

NOTE: Accessories are available



SPA 256

### 25 Ton Heavy-duty "Open Throat"® Presses

- Features Open-Throat design and movable ram head for full off-center load capacity.
  - Can be used in horizontal position.
- Here's a selection of 25 ton capacity presses that tackle stubborn pressing jobs. They combine power with convenience to give you dependable performance. For rapid ram advance you have a choice of the P159 two-speed hand pump, PE172 'Ram Runner' with remote control or the PE21 series pumps with 24 volt remote control. The control cord allows

the operator to view the work from all sides and have fingertip control of the ram. The press is also available with the PA6 air/hydraulic pump. The press bed height is easily adjustable with the winch mechanism; the bed will not drop when the handle is released. The big work area, 43-3/8" x 32", means you can position bulky jobs easily. The 25 ton ram is adjustable from side to side for off-center loads. Open Throat feature enables ram to be mounted on outside of press frame for fast bearing removal and more.

#### Pump Electrical Specifications

**PE 17 Series** - 1/2 hp, 115 volt, 60 cycle, single phase.

**PE21 Series** - 1 hp, 115 volt, 60 cycle, single phase. Both pumps available in 230 volt, 50 cycle, add suffix "-220" to order no.

NOTE: Accessories are available

Cap. (tons)	Type Ram Used	Stroke (in)	Ram Model	Order No.	Speed (in./min.)††		Type Pump	Valve Type	Pump* Model	Wt. (lbs)
					Advance	Pressing				
25	Single-Acting	14-1/4	C2514C	SPA2514	9.8	1.2	Air	2-Way Foot	PA6	683
			C2514C	SPM2514	.49 in./stroke	.03 in./stroke	Hand	Load-Release	P159	693
			C2514C	SPE2514	46.6	3.3	Elec.	2-Way††	PE172	665
			C2514C	SPE2514S	52	4.0	Elec.	3-Way†	PE213S	759
25	Double-Acting	14-1/4	RD2514	SPE2514DS	52	4.0	Elec.	4-Way†	PE214S	787

† Solenoid valve with 24 volt remote control hand switch.

†† Holds pressure with motor shut off. Also has an automatic dump setting. Furnished with a 10' remote motor control.

††† Typical performance based on 100 psi and 10,000 psi pump specifications. Actual speeds may vary under operating conditions.

\* Pump standard with press. Other Power Team pumps can be substituted.

dBA at idle and 10,000 psi: PE172-67/81 dBA; PE21-70 dBA measured at 3 foot distance, all sides.



**Hydraulics**

# Shop Presses

## 55 Ton Heavy-duty Shop Press

- Movable ram head and full off-center load capacity.
- These presses can be used in the horizontal position.

Fifty-five tons of hydraulic force can be brought to bear on very stubborn gears and bearings to make removal or installation an easy operation. Choose from models with a P460 two-speed hand pump, the PE172 'Ram Runner' or one of the Power Team PE21 series pumps. Whichever you choose, these pumps deliver the ram advance speed you need. The 55-ton rams feature chrome-plated piston rods and wiper

seals to resist corrosion and keep contamination out. The ram is movable across the upper frame and the press can be used at its full rated capacity across the entire width. Maximum daylight is 42" x 36" so positioning those bulky jobs is easy. With a friction brake winch you can easily adjust the height of the work bed. Just turn the crank to the right position and insert the bolster pins, no spinning handles to worry about, and the bed will not drop when the handle is released.

### Pump Electrical Specifications

**PE 17 Series** - 1/2 hp, 115 volt, 60 cycle, single

phase. Also available in 230 volt, 50 cycle.

**PE21 Series** - 1 hp, 115 volt, 60 cycle, single phase. Also available in 230 volt, 50 cycle.

**PQ60 Series** - 2 hp, 230 volt, 60 cycle, single phase. Also available in 230 volt, 50 cycle.

To order presses with 230 volt, 50 cycle pumps, add suffix "-22&" to order no.

NOTE: Accessories are available

Cap. (tons)	Type Ram Used	Stroke (in)	Ram Model	Order No.	Speed (in./min.)††		Type Pump	Valve Type	Pump* Model	Wt. (lbs)
					Advance	Pressing				
55	Single-Acting	6-1/4	C556C	SPA556	4.5	.5	Air Hand Elec.	2-Way Foot Load-Release 2-Way†	PA6	702
				SPM556	.23 in./stroke	.015 in./stroke			P159	712
				SPE556	21.7	1.5			PE172	734
55	Single-Acting	13-1/4	C5513C	SPM5513	.665 in./stroke	.026 in./stroke	Hand Elec.	2-Way 2-Way†† 3-Way†	P460	960
				SPE5513	21.7	1.5			PE172	980
				SPE5513S	24.4	1.9			PE213S	1,056
	Double-Acting	13-1/8	RD5513	SPE5513D	21.7	1.5	Elec. Elec.	4-Way* 4-way†	PE174	993
				RD5513	66.1	5.4			PQ604S	1,114

\* Frame is shipped assembled. † Solenoid valve with 24 volt remote control hand switch.

†† Holds pressure with motor shut off. Also has an automatic dump setting. Furnished with a 10' remote motor control.

††† Typical performance based on 100 psi and 10,000 psi pump specifications. Actual speeds may vary with operating conditions.

\* Pump standard with press. Other Power Team pumps can be substituted. dBA at idle and 10,000 psi: PE 172-67/8 1; PE21 Series-70; PQ60-74/76; measured at 3 foot distance, all sides.



**Sf 50** - Fixtures for use with 55-ton shop or 80-ton Roll-Bed® presses (2 ea.) Wt., 104 lbs.

Hydraulic gauge and hydraulic fittings are included with presses.

## 100 Ton Heavy-duty Shop Press

- Presses available with hand or electric pumps.
- Can be used horizontally.
- Movable workhead for full off-center load capacity across width of upper frame.

These presses combine 100 tons of force with the features and benefits you look for. You get plenty of daylight, 42" x 50", and the uprights are spaced for easy side loading of bars or shafts. The ram glides across the upper frame on rollers and locks in place for working on off-center pressing jobs. The press bed can be raised or lowered easily with the friction brake winch which locks the bed in place for inserting the pins; the upper bolster can be lowered 8 in.

for convenient positioning during repetitive jobs. You can choose a press equipped with either a single-acting or double-acting ram. You can also choose between a 2-speed hand pump, a PE172 'RamRunner' pump or one of the PQ Series "Quiet" pumps. The hand pump, P460, features a huge two gallon reservoir. The PE172 has 1/2 hp motor, 2-way valve and 2 gallon reservoir. The PQ603 pump has a 3-way valve and 2 hp motor. The PQ1204S has a 4-way valve and 3 hp motor.

### Pump Electrical Specifications

**PE 17 Series** - 1/2 hp, 115 volt, 60 cycle, single phase. Also available in 230 volt, 50 cycle, add

suffix "-220" to order no.

**PQ60 Series** - 2 hp, 230 volt, 60 cycle, single phase. Available in 115 volt, 60 cycle and 230 volt, 50 cycle. To order 230 volt, 50 cycle, add suffix "-220" to order no. For 115 volt consult Hanes Supply.

**PQ120 Series** - 3 hp, 460 volt, 60 cycle, three phase. Available in 220/380 volt, 50 cycle. To order 380 volt, 50 cycle, add suffix "-380" to order no.

Cap. (tons)	Type Ram Used	Stroke (in)	Ram Model	Order No.	Speed (in./min.)††		Type Pump	Valve Type	Pump** Model	Wt. (lbs)
					Advance	Pressing				
100	Single-Acting	10	C10010C	SPM10010	.356 in./stroke	.01 in./stroke	Hand Elec. Elec.	3-Way 3-Way 3-Way	P460	1,698
				SPE10010	35	2.9			PQ603	1,795
				C10010C	11.5	.8			PE172	1,690
100	Double-Acting	13-1/8	RD10013	SPE10013DS	35	5.8	Elec.	4-Way*	PQ1204S	1,885

† Frame is shipped assembled. \*Solenoid valve with 24 volt remote control hand switch.

†† Typical performance based on 100 psi and 10,000 psi pump specifications. Actual speeds may vary under operating conditions.

\*\*Pump standard with press. Other Power Team pumps can be substituted. dBA at idle and 10,000 psi: PE172-67/81; PQ60-74/76; PQ120-73/78. Measured at 3 foot distance, all sides.



**Sf 150** - Fixtures for use with 100 ton shop press & 100, 150, & 200-ton Roll-Bed® presses (2 ea.) Wt., 196 lbs.

## 150 & 200 Ton Heavy-duty Presses

- For those big, big jobs: Large capacity presses with PQ "Quiet" pump for fast ram approach.
- Can be used in the horizontal position.
- Full off-center load capacity.

These are the largest capacity shop presses in the Power Team line. Standing 7-1/2 ft. tall, they deliver 150 or 200 tons of pressing power for big jobs. The workhead is movable, yet the press retains its full rated capacity across the entire width of the upper frame. For fast ram

approach there is the famous Power Team PQ1204S "Quiet" pump equipped with a 4-way solenoid valve with 24 volt remote control hand switch. Raising or lowering the workbed is a simple one-man operation: Remove four pins and turn the winch handle to adjust the bolster height, then reinsert the pins. Also, the upper bolster can be lowered 11 in. for convenient positioning for repetitive jobs. The open sides permit easy loading and unloading of long material.

### Pump Electrical Specifications

**PQ120 Series** - 3 hp, 460 volt, 60 cycle, three phase. Also available in 220/380 volt, 50 cycle, add suffix "-380" to order no.

NOTE: Accessories are available;

NOTE: To order press with 230 volt, 60 cycle, single phase pump, order press less PQ1204S. Order pump No. PQ604S separately.

Cap. (tons)†	Type Ram Used	Stroke (in)	Ram Model	Order No.	Speed (in./min.)††		Type Pump	Valve Type	Pump Model***	Wt. (lbs)
					Advance	Pressing				
150	Double-Acting	13-1/8	RD15013	SPE15013DS	24	3.9	Electric*	4-Way**	PQ1204S	3,015
				RD20013	18	2.9				

† Frame is shipped assembled.

†† Typical performance based on 100 psi and 10,000 psi pump specifications. Actual speeds may vary under operating conditions.

\* Pre-wired at factory for 460V. \*\* Solenoid valve with 24 volt remote control hand switch.

\*\*\* Pump standard with press. Other Power Team pumps can be substituted. dBA at idle and 10,000 psi: 73/78, measured at 3 foot distance, all sides.





## Shop Presses

### Roll-Bed® Presses - 80, 100, 150 & 200 Ton

- The original, patented Roll-Bed press. Bed rolls out for easy loading and unloading. Redesigned with Improved features.
- Available in capacities up to a giant 200 ton model.
- Full off-center load capacity.

These presses have all the benefits of other Power Team presses plus the patented Roll-Bed feature. The lower bed rolls out so a crane can be used to load and unload bulky work. Max. daylight is 50-1/2" x 60" for 80 and 100 ton models and 51-1/4" x 64" on 150 and 200 ton models. Each is equipped with a PQ120 series "Quiet" pump with 4-way valve and 24 volt remote control so the operator can view the work from all sides and have fingertip control over the ram. They also feature double-acting rams with 13-1/8" stroke. The rams, with 2 to 1 safety factor, have built-in relief valve to prevent accidental over-pressurization during ram retraction. The ram collar threads make it easy to remove from the mounting plate. The heavy-duty mounting plate assembly is easy to roll from side to side for off-center pressing jobs.

#### Press features

**Roll-Bed design** - Lower two levers and push or pull. The bed glides in and out on bearings from under the ram. That makes loading and unloading bulky work fast and simple.

**adjustable lower bed width** - For more secure balancing and centering of large, bulky jobs, the lower bed width is adjustable. Just loosen the locking bolts and you can adjust the bed from 4" to more than 27".

**movable workhead** - For off-center pressing jobs the workhead can move. It moves on bearings across the upper bolster.

**full off-center load capacity** - Regardless of where the workhead is placed, these presses can still be used at their full rated capacity.

**lifting mechanism** - To raise or lower the upper bolster, simply turn a crank handle. A screw mechanism raises or lowers both sides evenly, in one continuous movement. (A heavy-duty 1/2" drill motor can replace the handle for automated adjustment.) Four locking pins hold the bolster in place for pressing.

**Heavy-duty straightening fixtures** - Make straightening jobs easy and accurate to within .004". Rollers are ball bearing mounted and handle raises or lowers for easy turning of the work.

**No. Sf 150** - Fixture for use with 80, 100, 150 and 200-ton Roll-Bed presses and 100 ton shop presses only (1 pr.) Wt. 196 lbs.

NOTE: Accessories are available

#### Pump Electrical Specifications

**PQ120 Series** - 3 hp, 460 volt, 60 cycle, three phase Available in 220/380 volt, 50 cycle, add suffix "-380" to order no.

NOTE: Different voltage and valve options can be obtained by substituting certain PA, PE or PQ series pumps. Consult Hanes Supply.

NOTE: To order press with a 230 volt, 60 cycle, single phase pump, order press less PQ1204S. Order pump No. PQ604S separately.

Cap. (tons)†	Type Ram Used	Stroke (in)	Ram Model	Order No.	Speed (in./min.)††		Type Pump	Valve Type	Pump Model***	Wt. (lbs)
					Advance	Pressing				
800		13-1/8	RD8013	RB8013S	46	7.5				2,886
100	Double-Acting	13-1/8	RD10013	RB10013S	35	5.8	Elec.	4-Way*	PQ1204S	2,944
150		13-1/8	RD15013	RB15013S	24	3.9				4,458
200		13-1/8	RD20013	RB20013S	18	2.9				4,546

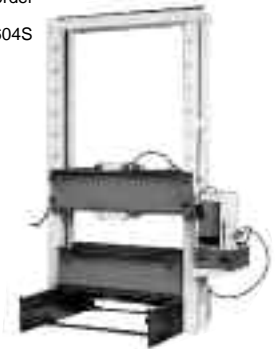
\* Solenoid valve with 24 volt remote control hand switch. † Frame is shipped assembled.

\*\* Pump standard with press. Other Power Team pumps can be substituted. dBA at idle and 10,000 psi: PQ120-73/78; measured at 3 foot distance, all sides.

†† Typical performance based on 100 psi and 10,000 psi pump specifications. Actual speeds may vary with operating conditions.



Sf 150



## Pullers

### Hydra grip-O-matic® gear & Bearing Pullers, & Straightening Tool

These pullers are ideal for pulling a wide variety of press-fit parts including bushings, wheels, bearings, gears and pulleys. Applications for the pullers will be found in motor repair shops, steel mills, mines, quarries, ship yards, utilities, maintenance shops, agricultural machinery repair, and the list goes on.

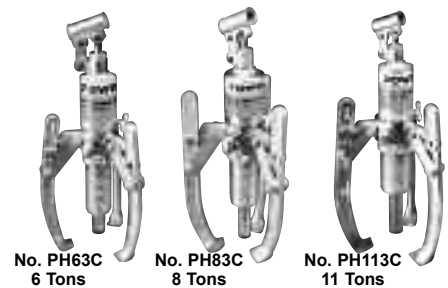
- Power Team, the leader in pulling tools for over 70 years, now adds three patented, self contained, pulling systems to the world's most complete line of innovative pulling equipment.
- These self contained portable pulling systems include a 2-way/3-way puller, hydraulic cylinder, and multi-directional hand pump all in one compact, lightweight unit complete with carrying case.
- Among the many features, pullers offer the often copied power, Team Grip-O-Matic® design... The harder the pulling force, the tighter the jaws grip for improved holding force
- Power Team pullers have been rigorously tested for top performance and reliability at maximum capacity and jaw spread.

- These pulling systems are covered by Power Team's exclusive Lifetime Marathon Warranty, assuring you of the highest quality and reliability.

WARNING: Power Team recommends the use of blankets for all pulling operations. For ease of visual clarity, we have shown the puller application photos without these safeguards.

#### Puller accessory converts PH113C into a Hydraulic Straightening Tool

Portable... Good for straightening mechanical shafts, round bars, etc. Simply remove pump and cylinder from puller head and insert them into the straightening tool accessory. (See photo at right) This product is widely used in steel mills, wire roll companies, wire extruding companies, textile industry, and any straightening situation where portability and power are required. Contoured heat-treated shaft adapter included.



No. PH63C  
6 Tons

No. PH83C  
8 Tons

No. PH113C  
11 Tons



No. HST11  
Used w/ No. PH113C  
Shaft adapter included.

Cyl. Cap. (tons)	Order No.	Reach (in)	Spread (in)	Stroke (in)	Puller Jaw Tip							Puller Wt. (lbs)	Puller Wt. (w/case)
					A	B	C	D	E	F	G		
6	PH63C	6	7-7/8	3-1/8	7/16	1/4	7/8	1-1/4	3-1/4	1-21/32	7/8	10.8	13.7
8	PH83C	7-1/2	9-13/16	3-1/8	7/16	3/8	1	2	1-31/32	14.5	18.6	17.6	20.6
11	PH113C	9	11	3-1/8	9/16	3/8	1-1/8	2	3-1/4	2-3/8	1-1/8	21	-
11	HST11*	5-29/32	16-1/8	-	-	-	-	-	-	-	Max. 2-3/8	-	-

**Hydraulics**

## Pullers

### Enforcer 55/u niversal Puller 55 Ton Capacity

- Super Grip-O-Matic pulling jaws (adjustable on 100 ton) the harder you pull, the tighter the grip.
- Puller cart equipped with a hydraulic lift system.\*
- A unique dual pump arrangement.\*
- Hydraulically-actuated jaws.\*
- 55-ton puller can be assembled in either 2/3-jaw configuration.
- 55- or 100-ton ram provides pulling force.
- Self-centering; center ram on work and the puller jaws will automatically grip work evenly.\*
- Guards at pinch-points protect operator on 55-ton.
- Swivel casters and large wheels on cart for greater mobility.
- Lifting brackets for overhead crane to lift entire assembly.
- Pushing adapters and ram extension included.
- \* 55-ton enforcer only.

Product Number	Cap.	Pump No.	Power Req.	Ram No.	Ram Specs.	Max. Spread Max. Reach	Min. Spread/Max. Reach	Vert. Hght. Adjust.	Cart/Puller W x L	Jaws	Wt. Lbs.
PH553C	55	PE55	115V 30 amp	C556C	6-1/4" stroke single-acting, spring return	48"/14"	4"/22"	12"-42"	32"x90"	2/3 jaw	749
PH533C-220	55	PE55	230V 15 amp	C556C	6-1/4" stroke single-acting, spring return	48"/14"	4"/42"	12" - 42"	32"x90"	2/3 jaw	749
PH55313	55	PE55	115V 30 amp	C5513C	13-1/4" stroke single-acting, spring return	48"/17"	4"/15"	12" - 42"	32"x90"	2/3 jaw	776
PH553C13-220	55	PE55	230V 15amp	C5513C	13-1/4" stroke single-acting, spring return	48"/7"	4"/15"	12" - 42"	32"x90"	2/3 jaw	776
PH1002	100	PE552S 2-speed	115V 25 mp	C10010C	10-1/4" stroke single-acting, spring return	48"/34"	15"/42"	12" - 36"	36-1/2"x94"	2 jaw	890
PH1002J	100	N/A	-	C10010C	10-1/4" stroke Single-acting, spring return	48"/34"	15"/42"	12" - 36"	36-1/2"x94"	2 jaw	825



For 220V, 50 Hz applications, order puller No. PH1002J and hydraulic pump No. PE552S-50-220.

### Enforcer 100 / u niversal Puller 100 Ton Capacity

The Enforcer 100... a puller that's big enough and powerful enough to tackle the really tough pulling jobs. It's designed to be used in areas where the maintenance of large equipment and machines is an everyday occurrence, like steel mills and oil fields, mining operations, utility projects, construction sites and shipyards. Also railroad yards, paper mills, airline shops and electric motor repair. A unit that is capable of taking on and completing pulling jobs other pullers wouldn't tackle. Here are 9 more reasons why the Enforcer 100 should be your first choice :

1. Adjustable jaws mean they always pull on a flat surface. Retaining chain holds jaws in place during positioning.
2. Grip-O-Matic feature means puller jaws grip even tighter as more pressure is applied.
3. 100 ton hydraulic cylinder, single-acting, spring return with a maximum working pressure of 10,000 psi.

4. Lifting bracket allows puller to be lifted if the workpiece center line is more than 36" off the floor.
5. Adjusting screw allows operator to move vertical position of the puller.
6. Spring loaded feature means the Enforcer 100 will align itself on uneven pulls.
7. Hydraulic pump is a 2-stage, high pressure unit controlled by remote control hand switch with 25' cord.
8. Tow bar provides puller with plenty of mobility.

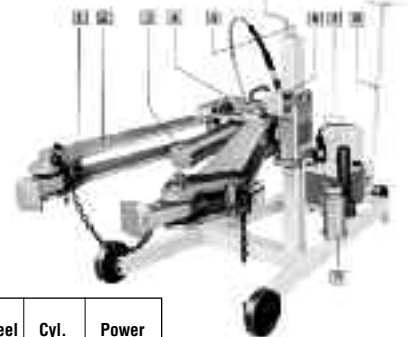
Pump Electrical Specifications **PE552S**... 1-1/8 hp, 115 volt, 60/50 Hz, single phase, draws 25 amps at full load. Also available in 220 volt, 50 Hz.

**No. PH 1002** - 100-ton two-jaw universal hydraulic puller. Includes two jaw Grip-O-Matic puller PE552S 2-speed hydraulic power unit;

C10010C 100 ton, 10 1/4" stroke single-acting springreturn cylinder; and six adapters. Wt., 890 lbs.

**No. PH1002J** - Same as above less hydraulic power unit. Wt., 825 lbs.

NOTE: For 220 volt, 50. Hz applications, order puller no. PH1002-220.



Order No.	A	B	C	D	E	F	G	Chart Size (in)	* Vertical Ht. Adjust.	Overall Length	H Max. Thickness Workpiece	Wheel Size Dia.	Cyl. Stroke (in)	Power Source Required
	Min. Spread	Reach @ Min. Spread	Max. Spread	Reach @ Max. Spread										
PH1002	15	42	48	34	1	2-1/4	5	36-1/2"Wx69"Lx44-1/4"H	12 - 36	94	12	8	10-1/4	115V
PH1002J	15	42	48	34	1	2-1/4	5	36-1/2"Wx69"Lx44-1/4"H	12 - 36	94	12	8	10-1/4	-

### Super grip-0-matic Jaw Type Pullers

- Fast, safe and easy one man operation. Knurled adjusting nut allows precise closing and opening of jaws.
- Super Grip-O-Matic, design, the harder you pull, the tighter the grip.
- Jaw spread control is fast and easy with this handy adjustment nut.
- Combination 2-jaw/3-jaw puller design gives you two pullers for the price of one.
- Manual or Hydraulic powered pullers available
- Puller jaws are made of forged alloy steel, and heat treated for maximum strength and durability.
- Heat treated, alloy steel forcing screws have rolled threads and are coated for corrosion resistance.
- Lower puller heads are heat treated alloy steel for maximum strength. Upper heads and adjusting nuts are aluminum, reducing weight of tool.

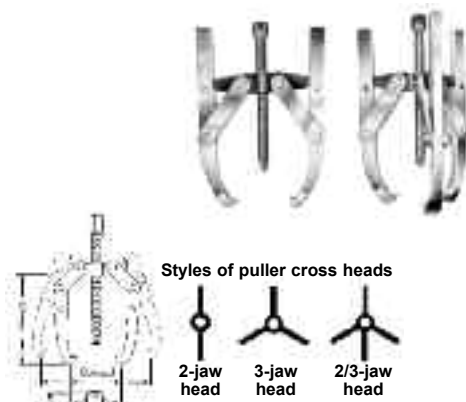
Cap. (tons)	Order No.	Reach (in)	Spread (in)	Forcing Screw Size	Hex size (in)	Ram Stroke (in)	Jaws	Wt. (lbs)	
9	SG92	7	0 - 7	3/4" - 16UNF x 12" lg.	5/8	-	2	8.7	
13	SG132	10	0 - 15	13/16" - 16UN x 16" lg.	5/8	-	Jaw	17.0	
25	SG252	16	0 - 18	1" - 14UNS x 21" lg.	3/4	-	Mech.	34.7	
13	SG133C	7	0 - 7	3/4" - 16UNF x 12 lg.	5/8	-	2/3	12.0	
20	SG203C	10	0 - 15	13/16 - 16UN x 16" lg.	5/8	-	Jaw	25.0	
37	SG373C	16	0 - 18	1 - 14UNS x 21" lg.	3/4	-	Mech.	48.0	
15	SGH153C	10-1/2	0 - 15	-	-	8-1/8	2/3 Jaw	69.0	
25	SGH253CR	14	0 - 18	-	-	14-1/4	Hyd.	134.0	
Pushing Adapters for Hydraulic Pullers		No. 350673 (11-1/16" dia. x 2-3/4" lg. for 15 ton puller)		No. 350674 (1-1/4" dia. x 3-3/4" lg. for 15 ton puller)		No. 350675 (1" dia. x 3-1/4" lg. for 25 ton puller)		No. 350676 (1-3/4" dia. x 3-7/8" lg. for 25 ton puller)	



## Pullers

### mechanical grip-O-matic Pullers (f ed. Spec.: ggg -P-00781-d)

Cap. (tons)	Puller No.	Jaws	Style	Max. Reach (in)	Max. Spread (in)	Forcing Screw Size	Wt. (lbs)
1	1020	2	Standard	2-1/8	3-1/4	5/16"-24 x 3-7/8" lg.	5 oz.
1	1021	3	Standard	2-1/8	3-1/4	5/16"-24 x 3-7/8" lg.	8 oz.
2	1022	2	Double-End Reversible	3-3/8	4	3/8"-24 x 4/-7/8"lg.	14 oz.
2	1023	2/3	Double-End Reversible	3-3/8	4-3/4	3/8"-24 x 4/-7/8"lg.	1-1/4
5	1024	2	Double-End Reversible	3-1/4	6	9/16"-20 x 6-15/16" lg.	1-3/4
5	1025	2	Double-End Reversible	5-1/2	6	9/16"-20 x 6-15/16" lg.	2
5	1026	2/3	Double-End Reversible	3-1/4	7	9/16"-20 x 6-15/16" lg.	2-3/4
5	1027	2/3	Double-End Reversible	5-1/2	7	9/16"-20 x 6-15/16" lg.	3-1/4
7	1035	2	Double-End Reversible	5	9	11/16"-18 x 9" lg.	4-1/2
7	1036	2	Long Jaws	8-3/4	9-1/2	11/16"-18 x 9" lg.	5
7	1037	2/3	Double-End Reversible	5	10-1/2	11/16"-18 x 9" lg.	6-1/4
7	1038	2/3	Long Jaws	8-3/4	11	11/16"-18 x 9" lg.	7-1/4
13	1039	2	Standard	11	12-1/2	13/16"-16 x 12" lg.	10-1/2
13	1040	2	Long Jaws	15-1/4	15-1/2	13/16"-16 x 12" lg.	13
13	1041	2/3	Standard	11	14	13/16"-16 x 12" lg.	14-3/4
13	1042	2/3	Long Jaws	15-1/4	17	13/16"-16 x 12" lg.	18-1/4
17-1/2	1043	2/3	Standard	14-1/2	14	1"-14 x 13-1/2" lg.	23
17-1/2	1044	2	Long Jaws	18-3/4	16	1"-14 x 13-1/2" lg.	26
17-1/2	1045	3	Standard	14-1/2	14	1"-14 x 13-1/2" lg.	33
17-1/2	1046	3	Long Jaws	18-3/4	16	1"-14 x 13-1/2" lg.	37
25	1047	2	Standard	15-1/2	16	1/4"-12 x 16-5/8" lg.	37-1/2
25	1048	2	Long Jaws	22-1/4	20	1/4"-12 x 16-5/8" lg.	42-3/4
25	1049	3	Standard	15-1/2	16	1/4"-12 x 16-5/8" lg.	54
25	1050	3	Long Jaws	22-1/4	20	1/4"-12 x 16-5/8" lg.	60



Styles of puller cross heads

#### Choosing your Puller

Compare reach & spread of pulling job with that of the pullers listed. Puller selected must have dimensions equal to or greater than the work. Determine whether 2- or 3-jaw puller is best for a good hold on part.

### Hydraulic grip-O-matic Pullers (f ed. Spec.: ggg -P-00781-d)

Cap. (tons)	Puller No.	Jaws	Ram No.	Pump No.	Max. Reach (in)	Max. Spread (in)	Forcing Screw Size	Wt. (lbs)
5	PF53C	2/3	C55C	P12	8-3/4	11-1/2	309874 Pushing Adapter	20
5	1057	2/3	-	-	8-3/4	11-1/2	-	8
5	PH53CR	2/3	C55C	-	8-3/4	11-1/2	309874 Pushing Adapter	12
10	PH103CR	2/3	C1010C	P55	15	17	350673 Pushing Adapter	52
10	1060	2/3	-	-	15	17	-	17
10	PH103CR	2/3	C1010C	-	15	17	350673 Pushing Adapter	32
17-1/2	PH172*	2	RT172	P55	11-1/2	16	1"-8 x 20" lg.	61
17-1/2	1064	2	-	-	11-1/2	16	-	22
17-1/2	PH172R	2	RT172	-	11-1/2	16	1"-8 x 20" lg.	42
17-1/2	PH173*	3	RT172	P55	11-1/2	20	1"-8 x 20" lg.	74
17-1/2	1066	3	-	-	11-1/2	20	-	37
17-1/2	PH173R	3	RT172	-	11-1/2	20	1"-8 x 20" lg.	56
30	PH302*	2	RT302	P55	19-7/16	26	1-1/4"-7 x 24" lg.	112
30	1072	2	-	-	19-7/16	26	-	54
30	PH302R	2	RT302	-	19-7/16	26	1-1/4"-7 x 24" lg.	94
30	PH303*	3	RT302	P55	19-7/16	34	1-1/4"-7 x 24" lg.	149
30	1074	3	-	-	19-7/16	34	-	90
30	PH303R	3	RT302	-	19-7/16	34	1-1/4"-7 x 24" lg.	130
50	PH502*	2	RT503	P55	27-5/8	36	1-5/8"-5-1/2 x 30-3/8" lg.	226
50	1078	2	-	-	27-5/8	36	-	131
50	PH502R	2	RT503	-	27-5/8	36	1-5/8"-5-1/2 x 30-3/8" lg.	206
50	PH503*	3	RT503	P55	27-5/8	44	1-5/8"-5-1/2 x 30-3/8" lg.	286
50	1080	3	-	-	27-5/8	44	-	194
50	PH503R	3	RT503	-	27-5/8	44	1-5/8"-5-1/2 x 30-3/8" lg.	266

\* Includes ram half coupler, No. 9767 - 6 foot hose, No. 9798 hose half coupler, forcing screw & crank.



### mechanical Push Pullers® (f Ed. SPEC.: ggg -P-00781-d)

- For maintenance operation involving the removal and installation of gears, bearings, pulleys, couplings, sprockets, shafts and other press-fit parts.
- Attachments are available for greater versatility.

The versatility of a Power Team Push-Puller

seems almost limitless since you can use it to apply either a pulling or a pushing force, depending upon how you set it up. With optional leg kits, your Push-Puller can obtain most any desired, extra-long or short reach. A wide variety of threaded adapters, bearing pulling

attachments and internal pulling attachments may be used with your Power Team Push-Puller to handle just about any pulling/installing job imaginable.

Cap. (tons)	Puller No.	Max. Reach (in)	Spread (in)	Pulley Pulling Attachments	Bearing Pulling Attachments	Internal Pulling Attachments
10	927*	8-3/4	2-1/8 to 7-1/4	679	1123	1153 1150 1151
17-1/2	938*	11-5/8	3-1/8 to 11-3/4	680	1124 1123	1153 1150 1151
30	939*	10-1/2	7 to 16-1/4	680**	1126 1127	1165

\* Includes legs, crosblock, sliding plates (pr.), washers (3), leg & caps (2), forcing screw & forcing nut.

\*\* Use 2 #8012 adapters to attach legs to attachment.



**Hydraulics**

**Pullers/Boxes & Sets**

**Hydraulic Push Pullers®** (f Ed. SPEC.: ggg-P-00781-d)

- Power Team's hydraulically powered Push-Pullers are designed to remove and install tight-fitting parts quickly and easily.
- Each unit includes perfectly matched components that can be detached and used with other hydraulic applications.

Once purchased, you'll find your Power Team Push-Puller can be the most versatile tool in your possession. When you order one of these Push-Pullers you get one set of legs, a center-

hole twin ram, a P55 hand pump, hose and hose half coupler, adjusting screw, and crank. The result is a pulling tool that makes the "impossible" jobs routine. Maintenance operations involving the removal and installation of gears, bearings, pulleys, couplings, sprockets, shafts and other press-fit parts are performed quickly, without costly damage. And your Push-Puller can be used for pushing or pulling.

Each of these Push-Pullers is powered by a center-hole twin cylinder ram. Center-hole

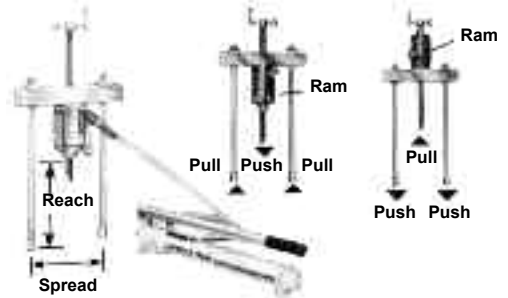
means you can insert the puller screw straight through the unit. Ram also features a basic head which allows operator to change from a tapped hole to a plain hole merely by changing the head insert, adding even more versatility.

Cap. (tons)	Puller No.	Max. Reach (in)	Spread (in)
17-1/2	PPH17* PPH17R 1062	11-5/8	5-3/4 to 11-3/4
30	PPH30* PPH30R 1070	12-1/8	7 to 16-1/4
50	PPH50* PPH50R 1076	13-3/8	8-1/2 to 20-1/2

**use These attachments**

Puller No.	Pulley	Bearing		Internal
		Pully Attachments		
PPH17	679	1124 & 1130	1154	
PPH30	680†	1126 & 1129	1165	
PPH50	-	1128 & 1129	-	

† Use 2 #8012 Adapters



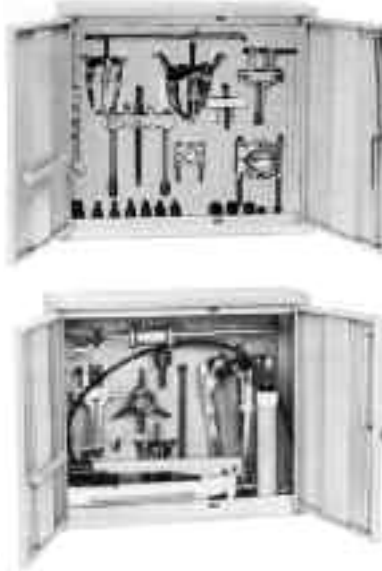
**10 Ton Capacity Strong Box Puller Set**

Here's a set of pullers that gives you almost unheard of versatility. This rugged lockable metal storage cabinet contains pullers, attachments, and extra puller jaws good for a variety of application Cabinet may be mounted on a wall, stand or work-bench.

DESCRIPTION	No.
10-ton capacity push-puller with 6-3/4" legs	927
5-ton comb. 2/3-jaw puller	1027
7-ton comb. 2/3-jaw puller	1037
Gear and pulley puller	7393
15-3/4" puller legs (pair)	1101
Bearing pulling attachment	1122
Bearing pulling attachment	1123
Internal pulling attachment	1152
Male/female threaded adapters (2 ea.)	8005, 8006, 8007, 8010
Female threaded adapters	8035, 8037, 8038, 8039, 8040
Shaft protectors	8050 thru 8053
Step plate adapters	8057 thru 8062
3 Long jaws (for 1037)	43892

**No. IPS10B** -Cabinet (25-3/4" x 29-1/2" x 10") with tool board adapter board, and tool set. Wt., 98lbs.

**No. 212867** -Cabinet, tool board, and adapter board only. Wt., 48 lbs.



**10 Ton manual/Hydraulic Puller Set**

This lockable metal strong box contains both hydraulic and manual pullers, plus attachments. The rugged storage cabinet keeps the tools organized and secure from unauthorized borrowers!

DESCRIPTION	No.
10-ton comb. 2/3-jaw hyd. puller	PH103C*
5-ton comb. 2/3-jaw puller	1027
13-ton comb. 2/3-jaw puller	1042
Slide hammer puller	1177
3 jaws for slide hammer puller	44148
3 jaws for slide hammer puller	1195
Slotted cross head for slide hammer puller	36578
Seal hook for slide hammer puller	27315
Internal pulling attachment (1 1/2" to 6" spread)	1152
Forcing screw for 1152	24832

**No. IPS10HB** - Cabinet (25 3/4" X 29 1/2"X 10") with tool board, pullers, and hydraulics. Wt., 119 lbs.

**No. 215315** - Cabinet and tool board only. Wt., 44 lbs.

**17-1/2 Ton master Puller Set**

Having this Power Team puller set at your fingertips will not only reduce your downtime but also increase your profits.

HYDRAULICS	No.	ACCESSORIES	No.
Single-stage hyd. hand pump ass'y.	P55	Male-female threaded adapters:	
17-1/2-ton ram with threaded insert	RT172	5/8" - 18 F. x 3/8" - 16 M. (2)	8005
Hose half coupler	9798	5/8" - 18 F. x 1/2" - 20 M. (2)	8006
Hydraulic hose - 6'	9767	5/8" - 18 F. x 1/2" - 13 M. (2)	8007
Tee adapter	9670	5/8" - 18 F. x 5/8" - 11 M. (2)	
Pressure gauge	9059	5/8" - 18 F. x 3/4" - 16 M. (2)	8013
		5/8" - 18 F. x 3/4" - 10 M. (2)	8015
		5/8" - 18 F. x 7/8" - 14 M. (2)	8017
		5/8" - 18 F. x 7/8" - 9 M. (2)	8018
		5/8" - 18 F. x 1" - 14 M. (2)	8019
		1" - 8 F. x 5/8" - 18 M. (1)	8020
		V- 8 F. x 1" - 14 M. (1)	8021
		Shaft protector set	8056
		Step plate adapter set	8075
		Pulley pulling attachment	679
		Female threaded adapter set	8044
		Female threaded adapter:	
		5/8" - 18 x 3/4" - 16 (2)	8038
		Bearing cup pulling attachment	1154
		Bearing pulling attachment	1122
		Bearing pulling attachment	1123
		Bearing pulling attachment	1130

**No. IPS17** - 17-1/2-ton capacity puller set. Includes hydraulics, pullers, and accessories listed above. Wt., 191 lbs.

**No. dB17** - Board for storing IPS17 set. Must be ordered separately. Size: 5/8" x 4' x 6' long. Wt., 68 lbs.

**NOTE:** A wooden storage box is provided with each of these sets. (36"L x 17-1/2"H x 14"D) *This is just 1 of our 5 puller sets ranging from 17-1/2 to 50 ton!*



## Pullers

### Bearing Splitters

**f ed. Spec.: g g g -P-00781-d**

Commonly call bearing "splitters," these versatile puller accessories feature "Infile-like" edges easily placed behind parts with limited clearance. Nine sizes are available for a variety of applications. For use with Power Team Grip-O-Matic® pullers or Push-Pullers.



### v-Belt Pulley Pulling attachment

**f ed. Spec.: g g g -P-00781-d**

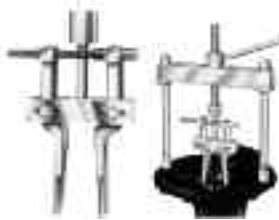
Two sizes of pulley pullers available, too. For use with Power Team Grip-O-Matic® pullers or Push-Pullers.®



### Internal Pulling attachment

**f ed. Spec.: g g g -P-00781-d**

With a Power Team internal pulling attachment you can remove bearing cups, oil seals, bushings and other parts from blind holes quickly, without damage to cost parts. Approved by leading bearing manufacturers, these attachments accomplish difficult removal jobs the fast, professional way. Attachments are adaptable, through adjusting screw and choice of jaw positions, to fit various diameters.



### Puller adapters

For use on Power Team Grip-O-Matic® pullers & Push-Pullers®, these special adapters make the difference when that "extra something" is required in various pulling jobs. Many sizes of each are available & some come in sets.



**f emale Thread adapters** - Aid in removal & installation of shafts, etc.

**Shaft Protectors** - Protects shaft centers from distorting under pressure.

**male-f emale Threaded adapters** - Used when pulling bearing cups, shafts, pinions, etc.

**Step Plate adapters** - Needed for installing & pulling parts found on hollow shafts or housings.

### f loor Cranes

**No. f C2200 - 2,200 l b. Capacity** - Versatile crane features a collapsible boom and folding legs for compact storage. Adjustable leg spread, telescoping boom, lifting chain and 2-speed hand pump.

**No. f C4400 - 4,400 l b. Capacity** - Same features as the FC2200 but built for heavier applications.

**No. f C6000 - 6,000 l b. Capacity** - Crane with hand pump.



### l oad Positioning Slings

2,000 lbs. to 6,000 lbs. capacity

For lifting and positioning loads. Feature self-locking worm and gear set for rapid angle adjustments.

**No. l R2000** - 2,000 lb. capacity sling.

**No. l R4000** - 4,000 lb. capacity sling.



